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TESTIMONY CONFLICTS ON AIRCRAFT ORGANIZATION

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FRIDAY, OCTOBER 2, 1925

SPECIAL BOARD MAKING A STUDY OF THE BEST MEANS OF DEVELOPING AND APPLYING AIRCRAFT IN NATIONAL DEFENSE APPOINTED BY THE PRESIDENT

STATEMENT OF COMDR. JOHN RODGERS, U. S. N.—(Continued)

Senator Bingham: Commander, with regard to the defenses of Hawaii, you must have some pretty definite ideas with regard to them.

Commander Rodgers: Well, so far as aviation is concerned, it seems to be about the best opportunity for airplanes to show their real value; that is to say, you get more defense for a dollar expended in aviation there. I think, than in any other way. That seems to be the general opinion, because the Army has war plans for a large number of planes, well over a hundred, and the Navy plans include 72 double engine scouts. That is, long-distance planes, some of the PN-9s, 36 torpedo planes, which will require a large base for naval aviation, about a thousand men at the base and about two thousand men to run the planes.

Senator Bingham: Do you think it would be feasible to place all the aviation for the defense of the Hawaiian Islands in the hands of the Navy?

Commander Rodgers: No, I don't think so, but I do think this: That the Hawaiian Islands are a Navy base and command there should be vested in naval officers; the same way at Panama. There is absolutely no question but at Panama the governor ought to be a naval officer instead of an Army officer. I have studied that thing very carefully and it is conceded by nearly everybody who can look at it at all from an unbiased standpoint.

Now, in Hawaii I think that the same conditions exist, although there is some slight difference out there. They haven't got a canal to govern, and the people are governed by themselves, of course. Some form of commission government has been spoken of, and it looks like the time will come when it will be absolutely necessary.

Senator Bingham: General Hines testified that he was disappointed with the part that aviation took in the beginning of the maneuvers. He

seemed to think that there was a lack of cooperation between the commander of the Navy planes and the Army planes, as to what was to be done.

Commander Rodgers: The cooperation between the Army and the Navy is what I sat on that Board for so long. And what we told the Army was this, just to tell us what to do, and we would do it. That is, if we could; if it was at all reasonable. None of us were conscious that there was any lack of cooperation. Whenever they told us to move, we moved. Of course, we had our own function, and that was scouting. We sent our planes out first and scouted and when the enemy was located they came back and were coordinated with the Army planes in that way. It was the Army then, as soon as the ships came into sight and commenced to attack it, it was the Army's business to get them out of the way, and we simply offered our services. The thing was all drawn up on paper, and it was all perfectly understood.

There was one thing that happened that to explain to you would take quite a long time. I have seen the Army aviators make quite a point that the Navy failed to carry out their promise to do what they were asked, but they did not promise to deliberately ruin themselves, just because they were asked to, and that is what they practically asked us to do. The situation was sort of a ridiculous thing. The second day we commenced to get radios from the vicinity of Molokai. They were headed as coming from the observers down there, 18 airplanes flew from the south and landed on Molokai, and established a base. Well, of course, we looked at those things, and 18 airplanes is a lot of airplanes, and there were not that many more. And then we would hear some more that came from the south and landed on Molokai. Then they got a telegram signed by the chief umpire. The enemy had landed some awful number of airplanes on Molokai, strongly intrenched, and have established base.

Well, Major Brant was bossing the Army job, and about 10 o'clock I was sitting in the cabin with Captain Yarnell, who was our head, and he came rushing in and said, the situation is this, that the enemy has all these constructive planes in a constructive camp represented by one plane and one tent. He said tomorrow morning they are going to take off and ruin us constructively. The first thing I did was to ask the umpire if we could not send one constructive plane down there, representing a hundred or more that we did not have, and wipe it out in the morning before they got there. But the umpire said that that would be impossible; we had to have real planes. It was all right for the enemy to have constructive planes, but we had to have real planes. So he said that the only thing to do now was for the Army and Navy to join forces and go down there with real planes and wipe this camp out before they constructively attacked us. He said otherwise the umpires were sure to allow them to take off in the morning constructively and come up and ruin us constructively. Well, it took Captain Yarnell about a minute to say that that was impossible, because he needed his planes to carry out his own mission. He had not finished scouting; and, anyway, he did not think it was a good idea, the thing that we had to do was to reserve our outfit for an attack, and if they came up and attacked us we would have to take the chances in defending the island, but we could not take the chance of sending them down there and losing them all, because the umpires might declare them out down there just as well as if we kept them aboard. My idea about that is that the less General Hines says about that, the better for him. He was the chief umpire, he and Admiral Coontz. The way they got the airplanes, if he really did have them—they said they had in the hold of the Langley and one other ship, and they went down off the Island of Hawaii, where they had a fairly good lee, in some wonderful record time, and they pulled them out of the hold of the Langley and shot them off, understand, all constructively, and they flew up and landed without a casualty, up there, on this Island of Molokai, and then the other ship, the transport had 18 more of them in the hold and in boxes, they came along side the Langley, and broke those boxes, and put them on the Langley, and they got them up in about 15 minutes, and shot them off, too. We thought it was, of course—well, you can draw your own conclusions. That was all I know about it, sir. Major Brant brought that point up, that we didn't back them up when he wanted to go down there and attack these constructive planes.

Senator Bingham: From the point of view of defending the naval base at Pearl Harbor, what do you recommend?

Commander Rodgers: I would recommend to stand pat on what they have got now, and increase the air force; take the Army off the fort island and give them another field, and let us use that whole place that they have got there, which, according to my calculations, is about the right size to serve us in time of war with our full war complement, and to establish or be prepared to establish outlying stations on Kauai, Lehau, and possibly Midway. For the Army, put a lot of bombers out there; give the Army a lot of bombers, and give us plenty of scouting seaplanes, and then I think we would be pretty well fixed.

Senator Bingham: If you were in command of the air defenses, how many planes would you need, and how many of each kind? How many planes and what types?

Commander Rodgers: Well, we would need first, the 72 planes similar to the PN-9, two engines, long piston plane; and that would be simply for

the scouting, and they could, when the enemy came into sight, be transformed into doing bombing duty. You would need all those 72.

Now, then, we have on our list 36 torpedo planes. Well, I am not very strong for torpedo planes at the present time, but they may turn out all right by the time we get them out there; I don't know. They might be developed in the meantime.

My original recommendation on that was to divide the whole thing out there into missions, let the Navy do the scouting and the Army the fighting. I put that up to the General Board. They thought that was a pretty poor idea, that the Navy ought to do some fighting. They can do the fighting when their turn comes, with these scouting planes. When the scouting is over, turn them into bombers. That is what happened in the joint maneuvers this year.

But the main thing out there is to let the Navy hold that field down there for their activity, and they will need it. It is right in the midst of Pearl Harbor, right in the middle of naval activities. The Army officers have to go through the navy yard to get ashore, and so do the soldiers, and it is sort of out of Army control and more or less in Navy control. The commandant there is always having trouble with the young Army aviators for speeding through his navy yard and with the soldiers for going through the navy yard in civilian clothes. Those are all small things, of course, but in time of war they would be multiplied and become a very serious situation there.

But the point is that we need the land. We need that land for Navy aviation, and I don't see how we can get along without it, and there isn't room for both activities there, and the Army is perfectly willing to go if they can get some place to go to, which they have not got now, of course.

Senator Bingham: How much additional building construction would you require to the 72 PN-9's?

Commander Rodgers: We will want some cheap hangars, if possible, and quarters to be put up at Kaunai Bay, and possibly something at Hilo. And then I think, with what the Army has got there now, we would not require anything. The Army has spent there in the neighborhood of \$2,000,000, and so have we. The Army construction, they have got more for their money, and more houses and more hangars, but not as good.

Senator Bingham: With the planes you propose, the 72 PN-9's, and the others, would it be possible to defend the entire group so that a landing could not be made anywhere?

Commander Rodgers: Of course, I think it could, but I do not know about that. It is questionable. I understand that the other view is represented by some Army aviation officers, that the enemy might come down to the Island of Niihau, which is the most western island, from another aviation field, and establish an aviation base there and fly against the wind, and attack Honolulu. But, of course, two people can play that game. We would be flying down wind and they would be flying up wind. I don't think they could do it. I think the answer to your question is yes, it could be done by airplanes.

Mr. Durand: Commander, I want to get a little clearer conception of your idea of establishing the naval aviator in the line of the Navy. You consider, I believe, that the heart and core of the profession of the naval officer lies in those elements that we call the command and administration of ships, squadrons and fleets.

Commander Rodgers: Yes, sir.

Mr. Durand: And then, clustered around this center, we might have a number of specialties, such as electricity, engineering, aviation, and so on.

Commander Rodgers: Yes, sir.

Mr. Durand: And then, as we understand it, in your view a naval officer should be able to function effectively in one or possibly two of those specialties, and at the same time obtain the experience in training which would keep him in line for a naval command?

Commander Rodgers: Correct, sir.

Mr. Durand: Such being the case, with your special line of promotion, as I understand, do you contemplate any difficulties in the administration of such a special line of promotion, but at the same time these naval aviators would require a certain time outside of the direct function of naval aviation in order to receive the training and experience to qualify them for that?

Commander Rodgers: No, sir; I do not think they would. They would not actually require it, although I said a little of it might not do them any harm. But I came up from Honolulu to San Francisco on the Idaho, and I was interested in the aviators on there and how they were getting along aboard ship and how they worked in with them. I said, "How are your aviators, any good besides aviation, any use to them?" "Why," he said, "When I came aboard ship, three aviators, the only thing I could trust was a watch."

Mr. Durand: There has been a good deal of evidence at one time or another before this board there is some danger of interrupting the continuity of training and service of an aviator, especially of the young grades; that is, that he drops out of step and that it involves some danger when he returns to active service in the air, that he has to have a fresher course and a period of retraining.

Commander Rodgers: That is true, all right. I know that from my own experience.

Mr. Durand: In your view, while the aviator is functioning as a naval aviator he may at the same time, when he is not actually up in the air, be continually adding to his training and experience relative to this central function which leads to command, his ability to command?

Commander Rodgers: Yes, sir. In that connection I would like to make a point about the flight pay. I think the idea is—the way the Comptroller has decided now is that flight pay is purely for the risk; that is all. If he takes the risk then he gets the pay; it does not matter what else he does. But I think it ought to be considered that it is pay for not only the risk but for the special work that he does, and that they ought to be willing to give a little more than the fellow has to do in order to qualify him for both sides, both the ship and the airplane duty. He has other opportunities to learn the ship's business than the one that I pointed out, and that is on airplane tenders now; that is, ships that do not carry airplanes but act as the mother ship.

Mr. Durand: In that connection, what type of plane would you look for in picking the commander of an airplane carrier?

Commander Rodgers: I would look for a man that had commanded smaller ships, like light cruisers; that is, permitted to do aviator's command, of light cruisers with a load of airplanes on it, and I have no doubt that we are going to get, in the very near future, some small airplane carriers instead of light cruisers.

Senator Bingham: There is no question in your mind that the commander of a carrier should be a naval aviator?

Commander Rodgers: Yes, sir; he ought to be. Of course, you understand in answering that question you must assume that he has been specially trained for it and we have looked ahead and provided for his having command of ships before he gets one of those things. There would not be any sense of putting a fellow in command of a 30,000-ton ship just because he could shoot around in an airplane.

Judge Denison: So far as your knowledge goes, is there any airplane in existence in service which would be able to come to this country across either ocean carrying a heavy military load, like 2,000 pounds of bombs?

Commander Rodgers: There is not only not now, but scientists are agreed that unless we find some new kind of metal or some wonderful kind of an engine that we do not know anything about now, no such plane ever can be made.

Major General Harbord: What you are really going to do is to pick out the total number of aviation officers that you think you are going to need in each of the grades and say that one rear admiral or ten rear admirals are reserve for aviation, and so many captains and so on all the way down, and they would go right up, but they would still be line officers of the Navy?

Commander Rodgers: Yes, sir. Of course, you understand that that would hurt the feelings of the line aviator, the ship man, but then that is hard on them; they just did not have sense enough to get into the Navy when aviation was going ahead.

Major General Harbord: It has all the advantages for the aviator that the separate corps has and retains whatever other advantages there are?

Commander Rodgers: Yes, sir.

The Chairman: Commander Rodgers, in connection with the question of how far an airplane now can go and the dangers and risks attending long flights, would you be good enough to tell us something about your recent flight from the coast to Hawaii?

Commander Rodgers: I have said that I cannot see how the Navy Department can in any way be held responsible for the failure to complete the flight as planned. Here is the story stated as briefly as possible.

When the PN-9-1 made an endurance flight of 28 hours and 35 minutes last spring and covered an estimated distance of 1,920 miles, it was believed that with the prevailing wind she would easily make the coast of the Hawaiian Islands, 2,100 miles from San Francisco. Consequently, in May of this year, Capt. Stanford E. Moses, commander aircraft squadrons, Battle Fleet, was placed in command of the flight. Three officers and two men were chosen for command of the PB-1, building in Seattle, and four officers and six men chosen for the PN-9 planes, for the two PN-9 planes from the aircraft squadrons, Scouting Fleet. These four included myself.

The officers of the PB-1 reported at the factory in the latter part of June, in Seattle, and found their plane far behind the building schedule. They saw at once it would be a question of whether or not they could get the plane ready for the flight, the tentative date of which was set for August 28. We who were to man the PN-9's, however, were in better luck. We arrived at San Diego on the 21st of June with two fine PN-7's, the forebears of the PN-9's. We immediately set up these planes and started special training for the flight in order that we might be prepared to meet all conditions of weather that might possibly occur in our flight. At the same time we acted as inspectors of the PN-9's which were being set up by the air station at San Diego.

We found at the time that we had to work very hard in order to get ourselves and planes ready, but in the end there proved to be plenty of time.

After arrival at San Francisco I felt that the planes were as ready as they could possibly be and that the time was propitious. The weather men on the day before the time set for the start predicted advantageous weather, and on the day of the flight, just a few minutes before the time for the start, came to my plane with the latest weather reports, which indicated that we would have the best possible conditions under which to fly to Hawaii.

And so we made our start on the afternoon of August 31. I was fully satisfied with my crew and my plane. My first assistant was Lieutenant Connell, an officer who came into the Navy during the war and who has had over a thousand hours in the air. He has been on aviation duty only, and nearly all of it has been in big seaplanes. He is a graduate of Penn State with the degree of bachelor of science, and was selected some years ago by the Navy Department to take a special course in aeronautical engineering at the Boston School of Technology, where he obtained the degree of master of science. He is wiry, a quick thinker, and an all-round athlete.

Next to him was Aviation Pilot Pope, a man who has been a mechanic, an excellent flier, with well over a thousand hours in the air. The others of the crew were Chief Radioman Stantz, who had a long experience in radio on seaplanes and over a thousand hours in the air; Aviation Machinist's Mate Bowlin, an exceptionally bright boy, an excellent mechanic, a flier and radio operator, whose whole naval experience has been with seaplanes. Although I was perfectly capable of handling the plane myself, my specialty was navigation and I concentrated on that, leaving the rest of the work to Connell.

In the PN-9-3 was Lieutenant Snody and Lieutenant Gavin, both of them seaplane operators of long experience, having come into naval aviation during the war, who have performed only naval aviation duty since that time. The rest of the crew were men of ability, considered fully equal to those of my crew, except that the mechanic was a chief petty officer of marked ability and specially trained in the particular type of engine which we were using. That was the new Packard engine. This fellow had been sent out by the Bureau to study the engines and had been there for, I think, about a year. I gave him to Snody in order to as much as possible make up for the fact that I had taken for myself the plane which we believed to be the best.

I may say here that we took five men in spite of the fact that Admiral Moffett had originally recommended only four, because we found that we could get off with five men and the same amount of gasoline which was carried on the 28-hour test.

We passed down the line of station ships, navigating without difficulty after taking off at San Francisco. The next morning we discovered that our gasoline was running low. I decided to land at the Aroostook and refuel, a contingency for which we were fully prepared. Unfortunately my navigation apparently was not as good as it had been before, for we did not sight the Aroostook as expected. My experience in practice tests had led me to believe that although the radio bearings from the ships would not be reliable for greater distances than 50 miles, they would be good within that distance, and in case I desired to find a ship which I did not see I should accept the radio bearings and approach her on those bearings. This I did, but I did not find the ship.

We searched for her until the gasoline gave out and then landed. We were unable to tell the searching ships our position, for we could not operate our radio without the engine. It was assumed by them that we had continued our course, and they started to hunt for us on that assumption. Not finding us at once, they were afraid that we would drift through the channels between the Hawaiian Islands and thus be lost. I believe these were the correct tactics for them to pursue, considering the limited number of ships at hand to guard the channels. They had expected us to drift much faster than we did. Aviators engaged in the search estimated our drift between 5 and 8 knots. As a matter of fact, with all sails set and leeboards rigged, the best we could do was about $3\frac{1}{2}$ miles in a 20-mile wind. We averaged 50 miles a day to the good. We hoped at first that we would be able to make Honolulu, but finding that we could not do that we set our course for the island of Kauai. About 20 miles off that island we were sighted by a submarine and towed into the port we were heading for.

I have no criticism to make of this search. Searching for an airplane down the Pacific Ocean from the Hawaiian Islands is a most difficult task. Criticism of the person in charge is easy, and I know from personal experience in that position the criticism is easily and readily made.

I understand that the Navy has been criticised for not accepting the assistance of the Army in this search. I know the facts upon which this criticism was based from the Army staff officer who handled the case for the commanding general. The Army aviators desired very much to make the search in Martin bombers and were finally permitted by the general to do so. The admiral, hearing of it, informed the general that in case that one of the planes went down he would have no ships to send to their rescue, for all were engaged in the search for the PN-9-1. The general, hearing this, recalled his planes by radio. The planes, however, completed the full time as planned, and when rebuked by the general for not returning they said they had not got the signal.

On three different occasions preceding this ships were called from their stations in the channels to go to the rescue of searching for the Navy planes which were down. We saw two of the Langley planes one day from the PN-9-1, but they did not see us, and I assure you that the only thing we wanted in the way of a search was for those surface vessels to block up that channel to prevent us from passing through in case we missed the island of Kauai. Our one fear was that we might not be able to make the island of Kauai.

In regard to the question of gasoline supply for the PN-9-1, we were two hours behind our schedule when we ran out of gas. This was due to lack of wind, and had we had the wind we would have reached our objective. Or had we got the same mileage out of our gasoline as we obtained on the endurance test, I think we would have also reached our objective, in spite of the lack of wind. Had we got both the wind and the mileage we would have reached our objective with a good margin, but as we got neither we were forced to land. Had we found the station ship we were looking for we would unquestionably have been able to get enough gas to get off to get in that night or the following day.

So far as the Navy Department was concerned, the Secretary of the Navy visited us at San Diego and directed the Bureau of Aeronautics to give us everything we needed in preparation for the flight. The Bureau of Aeronautics gave us everything we asked for in addition to what we had already been supplied with, and Captain Moses, in command of the flight preparations, left the control and preparation of the actual flying of the planes entirely in my hands; but he himself made a most complete preparation to guard the flight and did everything that was humanly possible to make the flight a success. Whatever mistakes the Navy Department may have made before or since in connection with aviation, I challenge anyone to make a just adverse criticism of its handling of this flight.

The Chairman: The reporter will place in the record the information asked of and furnished by Captain G. C. Westerfelt regarding the Naval Aircraft Factory at Philadelphia. The statement of Captain Westerfelt recites the development of the factory, its expenditures, etc., and continues:

The Aircraft Factory is open at all times to commercial manufacturers; and any methods or devices developed at the factory are freely available for their purposes. It maintains close relations and contact with these commercial aircraft organizations and with manufacturers of aircraft materials. As a result the factory has been instrumental in the development of new materials and processes and in their introduction into commercial use. A notable example is metal duralumin, for which a growing commercial demand has been created.

The Aircraft Factory has carried out many hundreds of valuable experiments; and has been responsible for the development of many improvements in naval aircraft. It has, also, built a number of experimental types, practically all of them of much use in advancing the art of aviation.

In particular, the factory has developed the large flying boat of the H-16 to the PN-9 type, and is at present working on the development of the PN-10, all-metal flying boat for fleet patrol purposes. In this series of boats, the final one of which up to the present is the PN-9, steady advance has been made, and there is no question that the United States leads all other countries of the world in the development of this type of flying craft. The flying range of the PN-9, approximately 2,400 land miles, is probably twice as great as that of any non-American flying boat. The range of the PN-10 will be considerably less than this, since an extreme range of this nature is not necessary in connection with fleet patrol activities.

The U. S. S. Shenandoah was built at the Aircraft Factory and was largely designed there from the basic design worked up by the Bureau of Aeronautics. In the building of this ship the fabrication of duralumin was brought to a high state, and the knowledge gained as a result of this construction has been of great value both at the Naval Aircraft Factory and at other plants.

All types of lighter-than-air craft have been worked upon at the Naval Aircraft Factory; and balloons and parachutes have been built there.

The compressed air catapult has been designed and perfected at the factory, and has been brought to such a stage that it has now been installed on a considerable number of ships, and is being operated in increasing numbers daily with practically no casualties. There have been many hundreds of live shots made by catapults of this nature at the factory and in the fleet without a single serious injury to any of the pilots up to the present time. There have been several plane casualties, due to slow shots or other mishaps, but flight personnel involved have either been uninjured or very slightly injured.

In general, the factory specializes on work which could be placed with manufacturers only with difficulty, due to the complicated nature of contracts which would be necessary. The factory thoroughly understands the Bureau's policy in this regard, and is thoroughly in accord with the Bureau's desire to place with commercial manufacturers all possible production work which can be handled in this fashion, with due regard for the Navy Department's

interests. The factory instead of being a competitor of commercial manufacturers is, in reality, an ally. Much of the work performed by the factory during the years since the war, is performed by commercial manufacturers under the cut-throat conditions of competition which has existed among them, would have occasioned them losses of the greatest seriousness.

One of the factory departments is an aeronautical engine laboratory recently brought into full working condition. This laboratory is one of the most completely equipped and efficient instruments of its kind in the world, and has already attracted much attention, due to the excellence of the work it is doing. The tests made in this laboratory on aeronautical engines and on engine accessories of all kinds have been and will be of the greatest value to the entire aeronautical activity.

MONDAY, OCTOBER 5, 1925

STATEMENT OF LIEUT. BYRON JAMES CONNELL, U.S.N., AND ONE OF THE MEMBERS OF WEST COAST HAWAIIAN FLIGHT

Lieutenant Connell, on temporary duty in Washington, said he graduated from Pennsylvania State College, entered naval aviation, trained at San Diego and Pensacola, is 31 years old, and has had over 1,200 hours in the air. He said he knew of no pilots unwilling to testify before the Board.

Senator Bingham: The Secretary of the Navy has told us that many naval aviators desire a separate Air Corps analogous to the Marine Corps. Do you think this information correct?

Lieutenant Connell: I do not know of a single officer who does not agree that some sort of change is desirable.

Senator Bingham: How many are in favor of giving the Chief of the Bureau of Aeronautics virtually the same power over personnel and training that the Chief of the Army Air Service has today?

Lieutenant Connell: I think it would greatly facilitate matters to give the Bureau of Aeronautics complete control of training, personnel and of all aviation activities. The Bureau of Aeronautics at present is more or less a materiel bureau. I think if some system were worked out whereby that Bureau would have complete control of all activities regarding aviation the result would be beneficial.

The Chairman: When you speak of "all aviation activities" being centralized, do you mean activities in both the Army and the Navy?

Lieutenant Connell: I am referring primarily to the Navy. I do not believe in a separate Air Service. Aviation is so closely connected with the fleet that a separate air service in my opinion would be absolutely to do exactly what everybody believes should not be done. The idea is that flying officers be put in command. It would be simply that the aviation activities would report on board like in a Marine detachment, and you would have aviation officers under the command of the officers of a ship in a separate service, and it would mean that the personnel would have control in aviation that have no knowledge of aviation. That is exactly the trouble now, to some extent, and that is one reason why I believe a separate Air Service would not work in the Navy.

On the other hand, if you have a system devised whereby you can train officers in the necessary training for command, that would take care of the problem to a great extent. That is one of the criticisms now that almost everybody agrees on. To properly employ aviation you must have men in control who know aviation. And I think that should be extended up as high as you can extend it.

Senator Bingham: Lieutenant Connell, how much of the unrest in naval aviation do you think is due to the questions of pay and of promotion?

Lieutenant Connell: I think that the personnel situation is responsible for a certain amount of the unrest. There is no definite status and no definite policy.

Senator Bingham: Do you feel that the planes you have to work with in the Navy are inferior to those in use in other countries?

Lieutenant Connell: There is no question but what the Navy has developed certain classes of planes to a very high extent. I think this PN-9 patrol plane, the one we had for our flight, is one of the best planes that could possibly be developed. And there is no question but what the next one will be improved over the PN-9. Every type of plane is a matter of continued development. The PN-9 is the ninth plane of that class that they have developed.

Senator Bingham: Do I understand, then, that you have no criticism to make of the actual way the flight of the PN-9 was handled, but only of the way the present system might work out, whereby it might have worked to your detriment as an aviator?

Lieutenant Connell: It might have worked to our detriment, but in this case it did not so work out, because the commander of the aircraft squadron of the battle fleet gave Commander Rodgers complete control of the flight.

Rear Admiral Fletcher: You speak of the Bureau of Aeronautics not having control of personnel.

Lieutenant Connell: The Bureau of Aeronautics simply recommends.

Representative Vinson: Is the pay of the aviator in the Army similar to the pay of the aviator in the Navy?

Lieutenant Connell: It is based on the same law, I believe, 50 percent of the base pay.

The Chairman: You spoke of the maneuvers at Hawaii, indicating that you could extend the effective radius of operations of your scouting planes five times?

Lieutenant Connell: Yes, sir. With the PN-9 type of plane we could extend the radius of operations practically five times the distance we went in the last maneuvers.

The Chairman: And what was your distance in the last maneuvers?

Lieutenant Connell: The patrol line was a fan patrol. That extended about 125 miles, and then 50 miles in fan shape and return. It is figured on increasing it from 125 miles to sea to 500 miles to sea.

The Chairman: That would not count on the plane carrying bombs?

Lieutenant Connell: A PN-9 plane could carry four 230-pound bombs and fly 500 miles to sea and return.

The Chairman: Have we a plane that could fly 2,000 miles with bombs and return?

Lieutenant Connell: There is no such plane that I know of.

Major General Harbord: Now, of course, the naval aviator today is a Navy man, and has the right to command when you get into that line of duty?

Lieutenant Connell: Yes, sir.

Major General Harbord: In the plan of Commander Rodgers you would preserve that and would not give him anything new, other than that, except the accelerated promotion?

Lieutenant Connell: I believe Commander Rodgers advocated extra promotion and a single budget, and things of that sort.

The Chairman: Lieutenant Connell, have you anything to say to us in the line of your work; any suggestions to make for the improvement of the Air Service, in view of your very unusual experience in the flight of the PN-9, No. 1?

Lieutenant Connell: I might say a few things. I have already brought out that the naval aviators had complete control and charge of the flight. The commander of the fleet was already in Hawaiian waters when the flight was made, and Commander Rodgers had control of all the details of the flight. Considerable time was spent in training at San Diego. The training was most complete. Flying at night time, and other tests were made, and Commander Rodgers spent a great deal of time in piloting the plane himself; as a matter of fact, he is a very, very good flyer. A great deal of time was spent there in navigation, and I honestly believe that Commander Rodgers did more to develop aerial navigation than has been previously done in naval aviation.

The day of the flight the weather report was very favorable, and we firmly believed that we could make it a nonstop flight. However, if the wind failed, all preparations had been made, and I think that the point was stressed by the press so much that it was a nonstop flight that when we failed in the nonstop flight they thought it was an unwise thing to attempt. As a matter of fact, we had practiced taking off in rough water, and we knew that it would be an easy matter to land and refuel in case it was necessary. The trade winds out there blow at 15 to 20 miles an hour for weeks at a time, and the only thing we felt sure of was the fact that we would get a favorable wind. We didn't get that wind, due to the stagnation all over the Pacific, which we did not get the reports of, although the experts had studied it. And we had every reason to believe it would be a successful flight.

The failure to find the Aroostook was the only failure in our plans, due to the failure of the radio compass bearings. And I believe the experiment, especially the testing of the planes at sea, was a very valuable thing. I do not consider the flight a failure. It was either a case of a nonstop flight, or to land and refuel and fly in. In fact, I think all of us would like to try it under the same conditions. And we could not do any more than we did if we were to leave tomorrow; we would leave under the same conditions, except we would probably get two weather reports instead of one.

The Chairman: Is there anything more, Lieutenant?

Lieutenant Connell: Something should be done in regard to commercial aviation, to stimulate aviation. I think the Aerial Mail, with its well-trained pilots and personnel, would form a very fine reserve in case of war. I believe that that should be expanded and extended. I believe commercial aviation should be fostered, if not through a subsidy, through some sort of legislation which will control it.

The number of well-trained aviators we have in the country is a very important question to consider. The Navy trained about 3,000 of them during the war, and it takes a great deal of valuable time to train them. Aviation is bound to develop in time of war, and unless you have an enormous establishment you cannot hope to get the necessary personnel. Therefore a trained reserve is very important. I just want to stress the point that whatever system they arrive at that unless you have control of aviation by flying personnel it will only be a temporary solution, and the thing will have to come up again and again and again until it is satisfactorily settled.

STATEMENT OF COMDR. KENNETH WHITING, U.S.N.

Commander Whiting said he is 44 years old, graduated from Annapolis in 1905, learned to fly at Dayton, Ohio, under Orville Wright, and at Pensacola, has had about 1,000 hours in the air, and is at present on duty in the Bureau of Aeronautics here. He said he knew but one pilot who favored retention of the present system.

Senator Bingham: Have any pilots ever admitted to you that they would be unwilling to give a Board of Inquiry their opinions regarding the best way of improving the Air Service?

Commander Whiting: No, sir; but I think many of them are reluctant to go before committees in Congress and advocate policies which are not in accord with the policy of the Navy Department.

Senator Bingham: The Secretary of the Navy has told us that many of the aviators in the Navy desire a separate corps analogous to the Marine Corps.

Commander Whiting: Yes; I think that most of the younger naval aviators do desire what they call a corps, and they only desire that because they have not studied it carefully enough; they have not gone into the personnel situation. They do not understand that you cannot have a corps and command at the same time they want the corps, and they want command.

Senator Bingham: Of the naval aviators with whom you have personally conferred, how many do you think are in favor of retaining the present system substantially as it is now, without change?

Commander Whiting: I know of only one, Lieutenant Commander Leighton, and I have great admiration for his judgment, although I do not agree with him.

Practically all of the aviators think that a part of the solution of their problem is to have the training and detail of the officers after they are trained, entirely under some one head, and that, naturally, would be the Chief of the Bureau of Aeronautics. This can be accomplished without any legislation, as the Secretary of the Navy has the power to assign any duties to any bureaus that he wants. The Navy Department differs in this way from the Army, where the duties of the various corps and bureaus are assigned by law.

Senator Bingham: Of the pilots whom you know in the service, how many are in favor of Colonel Mitchell's plan of a united Air Service, the Army and Navy pilots to be under the same head?

Commander Whiting: I think, very few, sir.

Senator Bingham: How many are in favor of a separate department of the air?

Commander Whiting: I do not think any are, sir.

Senator Bingham: Will you give us more fully your idea regarding a solution of the personnel difficulty?

Commander Whiting: I do not know why they call it the Whiting plan, because this Board that was appointed to consider the question of personnel and policy in the Navy as regards aviation submitted two plans. One of them wanted a corps in the Navy and the other was appointed to permanent duty after a probationary period in aviation. That is the plan they call the Whiting plan, although all the members discussed it and changed it.

This whole thing is brought about by the fact that there is no definite policy on aviation as regards personnel in the Navy Department, and never has been, and the game has been going on for fifteen years. There is a sort of an unwritten understanding that an officer shall serve for four years in aviation and then he shall go back and do his regular line duties for some period of years, and then perhaps be permitted to return to aviation duty. That was the policy when aviation was first formed. It has been impossible for the Bureau of Navigation to live up to that policy, because aviation has grown very much faster than the officers have been fed into it.

While that policy still stands, navigation has never been able to live up to it, but the aviators themselves do not know what their future is to be. In a few cases where officers have been passed over who have been on aviation duty I am quite sure the officers feel that it was caused to some extent by the fact that they served in aviation.

Now we desire to get a definite status and policy; and four plans suggest themselves.

United Air Service: Every naval officer who has studied that at all has rejected it as being unsound.

The second idea was a corps in the Navy, and there it was that the question, it appears, first started. It gives conduct of aviation, aviation training and development, and a personnel, but the question of command of higher command, command of carriers, and eventually higher command of air forces, is left in doubt, and if you do not give that command as to the condition of a hundred or a hundred and twenty-five aviators serving on a carrier which may at any time be spent on detached duty and retained on detached duty, the aviators will receive their orders from the commanding officer of the ship, who is not in any way familiar with aviation, particularly if you have a corps, because he will never have done any aviation duty. Therefore I think the corps fails.

The third plan was a plan of permanent aviation duty after a probationary period in aviation. That would mean that officers after serving ten years in aviation duty, a certain proportion of them would be selected and assigned to permanent aviation duty, and these officers would have to qualify themselves for all the duties of a line officer as regards command of aircraft carriers and tenders, but not of command of battleships, light cruisers, destroyers, submarines. The question of whether eventually when they become admirals they would command a fleet might be very well left to the future, but we certainly do not have any idea of giving up that right. We feel that maybe ten or fifteen years, twenty years, from now, the major work of the Navy may be the handling of air forces. The surface craft will merely be the means of transporting them across the ocean. That was the third plan.

The fourth plan is what is called the Bureau of Navigation plan, and is what we speak of as an in-and-out system. That is, you serve in aviation for a detail of four years, are all detached from aviation and go back and do general line duties which are not associated with aviation in any way for a period of two years. Then half of them would again be detailed to aviation duties for the period of four years, and then they would go out for two years, and half of those that remained at that time would be ordered back into aviation duty.

We feel in aviation that the fallacy of that plan is this, that these young gentlemen after serving four years have become quite proficient in aviation. Then they stop flying for two years. You bring them back to their detail. They have gained two years in rank, so that in assigning them to duty they must be assigned over officers who at that time are well along in their four years' detail. They are assigned in charge of flyers who really know more about it than they do, because they have been right through it.

It would be necessary to give them a refreshing course, which would use up anywhere from four to six months, and the same process would be repeated on and on. We do not think that you would have as efficient aviation under that system as you would under system 3 or system 2.

The Chairman: Is it the system 3 that is referred to as the Whiting plan?

Commander Whiting: Yes, sir. We went over our plans for the expansion of aviation in the Navy, based on the assumption that in ten years we would complete our carrier tonnage of 135,000, and added to that the necessary aviation service, such as the spotting planes, the combat planes that are on the battleships, the reconnaissance planes and the scouting planes that are on the light cruisers, submarines, destroyers. We found that the number was 1,500.

We looked over all the types we were going to use the number of combat, number of scouting, the number of patrol, the number of observation, the number of bombing and torpedo, and we calculated the number of pilots that we would need, the number of squadron commanders we would need, the number of what the British call wing commanders, who are officers who command a number of squadrons, and the number of group commanders that would be necessary to man all of this aviation, and we found that 1,225 of the 1,500 are required in the first ten years' period.

Now take the 1,225 and apply 5 percent attrition to them through the period of ten years. At the end of two years you find that you have got 91 officers coming up for 25 jobs. That is, there are not more than 25 jobs each year existing for these 91 officers. So at the end of ten years you find yourself in the position of having to eliminate the difference between 91 and 25—I think that is 66—66 officers have to be arbitrarily thrown out. That won't do.

So then we took 10 per cent attrition and we found that the number changed then from 91 to 66, coming up for 38 jobs.

So then we tried 15 per cent attrition, and there we found, using, of course, the same number, 1,225, in the ten-year period that there would be 47 officers coming up for the 38 jobs, and we assumed that would be the best attrition.

Then we went back and we said, Now take this ten-year period. What system shall we use? We said, It will take a year to train these officers at Pensacola, counting the time of ordering them there and the month's leave that they should have after they leave there and the time to travel to their station; it would be about a year. So we will give the first period as four years, and we will apply the 15 percent attrition to that at the end of that time. So that works out that the class entering has to be close to 200, and the number that are arbitrarily put out at the end of four years are 53. The next detail would be for three years, and the number going then would be 25. The next detail is for three years, and the number going out is 23, 38 remaining. The 38 that remain, remain constantly on aviation duty. We thought that ten years was a reasonable time, although the Bureau of Navigation would have to be consulted on that, to find out if these officers that left at the end of ten years would be qualified to continue on their line duties.

That gives you an idea of the attrition. In other words, out of every four men who enter aviation, only one—I do not care whether you have a united air force, a corps in the Navy, a detail system, or what you have—only one out of every four men can hope to remain on aviation duty after a period of about ten years if your forces are properly manned. We felt that the officers should be taken as young as possible into aviation. Therefore we advocated a system of taking them straight from the Naval Academy.

At the end of that ten-year period we said, "This is where the lieutenant-commanders begin." Then we went on and said, Now, what has a lieutenant-commander got to do? He has got to command a squadron for a period of three years to be efficient. He will have to serve certainly, if he is going to qualify in order to command ships, as the head of a department aboard a carrier or tender, the head of the aviation department, executive officer, first lieutenant. That would be a smaller carrier of the Langley type or a tender of the Wright-Shawmont type.

So we gave him eight years in there and thought that he could accomplish that in that time, when he became a commander. He has still got to go in the air a certain amount regularly, and then we said he should be about 40 years old when he gets there, not over that, if he is going to lead wings. A wing commander is a man who handles in the air a large number of squadrons. If we complete our carrier tonnage we will have fully 150 bombing and double that number of combat planes to handle in the air as a unit. Of course, it will be done by an officer of the rank of admiral eventually, and it will take ten years to arrive at that time, at least, but the wing commanders will be handling wings and there will be a certain number of flying captains who will handle groups, which are a combination of wings. A wing is two or more squadrons; a group is two or more wings, and the force is the whole business.

We divided the period for lieutenant-commander into eight years, commanders eight, captains seven, and the admirals serve about five, we retired these officers at about 60 because we felt that they have lived a little bit faster and harder and been under a greater mental strain throughout their life than the ordinary run of naval officers who do not serve in aviation.

Now the number of officers in those higher grades if you have a force of 1,500 is 5 admirals, 30 captains, 60 commanders, and 180 lieutenant-commanders.

We consider a class of aviators starting at the Naval Academy and part of them devoting their entire career to aviation. Say 200 are assigned, and the attrition as given in the tables is 15 percent for the first ten years, and then an average of seven percent for the remaining years. A midshipman on entering at the Naval Academy would be given a physical examination for aviation, and those found physically unqualified listed in one list and those qualified in another list. The next year he would be given a certain amount of ground work. In other words, all through his course he would be trained in what we call ground work, which is the study of aircraft structure, the aircraft engines and their operation, faults, and study of the machine guns, bomb-sights, bombs, bomb structure, navigation, and the rest of the thing that does not require any work in the air; it is all on the ground.

In the fourth class year he has this physical examination and a certain amount of ground work. In the third class year he has another physical examination. Then in his third year that he is in the Naval Academy, he would be given five hours dual instruction in the air. There would be a pilot with him who was skilled and specially selected, who would simply fly this fellow around, letting him take the controls with the idea of finding out if he had the air sense. There are certain people who never can fly. They have not an air sense.

The idea of these five hours' instruction is not to qualify a lot of them, but to eliminate those officers who will never qualify. First class year, I repeat the process by giving them ten hours dual instructions, and I list them according to their proficiency as pilots, nothing to do with their class standing at all.

Immediately upon graduation I take from this list—and I want it understood that these are all volunteers; I do not want any compulsory flying—that is a point we differ with the Bureau of Navigation, on—I take from this list of people that have qualified that I know will make flyers, the necessary number, and send them directly to Pensacola, where they are given a year of flying, which will amount to actually about nine months of flying. We now give a certain amount of advanced flight training at Pensacola, but it is not a great deal, and that is because we have not the time. Under this system you would have more time.

Upon graduation from Pensacola after one year's instruction the class would be assigned to carriers, battleships, cruisers, in the VF and VO squadrons. VF is the fighting, and the VO observation. Those assigned to the VF squadron should act as first pilots, and those assigned to the VO squadron, or the observation squadrons of scouting planes on the battleships, as second pilots. They would be given five years at sea. They would be a year behind their own class when they went to sea, but only a year, and then they would serve for five years at sea.

The average time of a pilot aboard a battleship who is trained for spotting work is 150 hours a year, and probably will increase to about 200 hours a year, but will not increase much over that. That 200 hours corresponds almost exactly to the time spent by the battleship on what we call general quarters, or battle stations. At battle stations the place for the pilots is in the air, so that he is not missing anything as regards ship's duty or education while he is in the air during that period. While he is flying I would require him to do exactly the same duties aboard the battleship as all junior officers do.

As junior officer of the deck he gets familiar with handling of the deck; he learns the routine of how the ship is operated. An aviator has just as much time to do that as any other officer.

During this year, as far as aviation goes, this officer would be the second pilot in the spotting plane. The next year, if he was competent, he would be stepped up to possibly senior watch officer, and would begin on the period of whatever would be required, if it was two years as a junior officer, he would serve two years, and if it was only one year as a junior officer he would serve only that one year, and following that one year he would become senior watch officer, and would stand watch at sea, in port, and so forth when he was not flying.

The third year this officer would step up to command an aviation division on the ship. He would have under him two or three junior officers, and he might have on board the ship two combat and two observation planes, or one observation and three combat planes, and he would be responsible for them.

I think then at the end of three years of aviation, if they had a number of personnel, they would say, "Well, this fellow has been on a battleship

long enough, and we will now put him on a carrier; he has still got two years' sea duty to do, and we will shift him to a carrier for two years, and he will serve there in an observation squadron, or in some capacity aboard the carrier as an aviator."

That officer has then had one year training and five years' actual flying in the Navy, five years sea duty, and he is then entitled to go to shore for duty. The duty that a junior officer gets ashore does not last much over a year or a year and a half. That is sufficient time. This officer would be sent ashore to a school, where he would be trained as an aviation leader. In other words, an aviation leader is a leader of six planes. He would do duty at some naval air base, and would be given special training to qualify him for duty as an aviation leader. He would be required to do his necessary ship's duty, commensurate with his rank during that period, in addition to his aviation duties.

Now they step along and they alternate, but all their shore duty under this plan is in connection with aviation; all their sea duty is in connection with aviation, but in addition, at sea, they are doing ship's duty also.

Now, when they get to be squadron commander there would only be three of them at the most, with battleships for observation planes, and perhaps three for combat work, and the proportion with the light cruisers would depend on the number of light cruisers available, and this again shows that most of them are serving their time on carriers and tenders.

Representative Vinson: What about the officers that do not go to the Naval Academy? How will you work them?

Commander Whiting: I am not going to work any of them. I am going to get them all at the Naval Academy, and in order to do that it is necessary to increase the number of appointments to the Naval Academy.

The Chairman: Now you have carried this man to the position where he is about to become a lieutenant commander?

Commander Whiting: He is in the lieutenant-commander grade now, sir, when he is a squadron commander.

The 35 or 40 who remain on aviation duty, after the 10 years or 12 years or 15 years, would be assigned practically to aviation duty, but would be given sea duty in aviation at regular intervals so as to qualify them eventually for the command of ships. They would go from a fleet air base, where they had been prepared in squadrons, to various squadrons, some to the carriers, some to the battleships, some to light cruisers, some to the destroyer force, some to tenders, and so forth. That assignment would be a three-year course and that would take them up to 12 to 15 years. When ashore these officers would perform duty at air bases, air stations, inspector of materiel, in the Navy Department, the Bureau of Aeronautics, the Bureau of Ordnance, the Bureau of Navigation, and Bureau of Operations, the movement of ships, war plans and material, in the Bureau of Construction and Repair, and in the Bureau of Engineering. After a cruise at sea as a squadron commander the next tour of shore duty would be for a period of three years, one year of which would be spent in the Junior War College, one year in a school for tactical air training, where they would be taught the duties of a wing commander. Their next course of duty at sea would be on a large carrier as head of the Department of Aviation, of Navigation or Training, or they would go to a small carrier in the Aviation Department, or as executive officer, and would be on that duty for two years. They have now had 20 years' service in the Navy. Their shore duty would be for three years, in which they would attend the Senior War College course, a course of training as group captains whose duty would be to control a number of wings.

Then the next sea duty would be in command of aircraft carriers and tenders, on the staffs of various air force commanders and commanders of the battle fleet, train, destroyer and cruiser forces. Their shore duties would be as assistant chief of bureau, commanding officer of the various air base stations, schools, and as students in the various War College courses. That would be 28 or 29 years. The 30th year the sea duty would be as commander of various air forces, the commander of the larger aircraft carriers, groups of air force, and so forth, and their shore duty would be as chief of the bureau, on the staff of the War College, or other tactical schools.

He gets to be captain three years before the ordinary captains in the Navy and is temporary there, but without any increased pay. He gets to be an admiral three years before the ordinary admiral, and I can assure you that the amount of mental strain he has been under during that period of years is such as to justify him being promoted to that rank at as early an age as possible, commensurate with his having the proper experience.

I do not feel that that plan is greedy.

Representative Vinson: What proportion of it would have to be corrected by legislation, in your opinion?

Commander Whiting: I think the giving of this temporary rank and permanent aviation duty will require certain modifications of the aviators' examinations.

Senator Bingham: I am anxious to know just what you think of the development of carriers, particularly their utility with regard to coast defense?

Commander Whiting: On the question of coast defense I think carriers are very, very valuable when considered from this point of view: In any war that we are forced into, if we are going to be successful we must go to the enemy, and to go to the enemy you have got to go to him on the water.

Senator Bingham: It has been stated that the deck of a carrier in the future would be the most vulnerable spot.

Commander Whiting: Decks of carriers are exceedingly vulnerable, awfully vulnerable, even to attack by small combat planes, because they handle so much gasoline and have so many bombs aboard. The preparations for refueling are such that there is always present a great danger from fire. Fire will explode the bombs.

Senator Bingham: What would be your personal plan for the best possible defense of this very vulnerable spot?

Commander Whiting: Why, there are two defenses, of course, against attack from the air. One is the defense of using your own combat planes to protect you, and the secondary defense are the machine guns for low-flying planes, antiaircraft machine guns. I had the privilege of going and watching the Army shooting all this Summer. I was particularly interested in the work done by the machine guns in the Coast Artillery. They can talk about it being worthless, that is, antiaircraft being worthless, but I do not agree with them.

Senator Bingham: What is the tonnage of the Lexington?

Commander Whiting: Thirty-three thousand tons. Under the Limitation of Armaments Treaty it was provided that a vessel should not exceed 27,500 tons and would be over 10,000 tons and should not carry guns over 8 inches. We at that time were building six battle cruisers, and were per-

mitted to convert two of them into carriers not to exceed 33,000 tons. They will be large carriers, and the fastest ships in the world at sea.

Senator Bingham: How many carriers have we between 10,000 ton and 27,500 tons?

Commander Whiting: We are permitted to have 135,000 tons of carriers. These ships will mean 66,000 tons, and that leaves 69,000 tons that can be used in any way we see fit.

Some of our planes have not been quite right. There will be lots of people who will come up here and throw dirt at them. We have made some mistakes and we admit it, but we are correcting those mistakes and have been only going four years. So I feel if you will leave us alone and let us go on with our work we will come out all right. And I believe we will compare favorably with anything you will find in foreign navies.

Senator Bingham: You spoke of the danger of losing competent naval aviators from the Navy, due to the action of the law. What did you mean?

Commander Whiting: Of course, some of us go out on age and grade. Some of us have to be retired if we are not promoted to captain or commander or lieutenant-commander.

Senator Bingham: Is that going to affect the service as to some of your best naval aviators?

Commander Whiting: It will affect some of them; whether they are the best or not, I do not know. But this new law they are speaking of I am not familiar with, and it was only brought to my attention a few days ago. If it practically eliminates all reserve officers that we took in during the war, that is something that should be avoided. We have a large number of the classes of 1918, 1919, 1920, and 1921, where we have a big bloc of aviators. But it is none too big, and they will all be used up in the years to come, or any who desire to stay, and they should be allowed to stay. Any law that would put them out in two years should not be passed.

Major General Harbord: When the independent air force, about which we have heard considerable testimony, acting independently, has been beaten, or a combined air force, what can it do but return to its shelter under the Army or the Navy?

Commander Whiting: I personally do not see how an independent air force can be of any use in the protection of the country, unless you want to stay at home and let people come to you and fight you.

Major General Harbord: It has been testified that the Army and Navy aviators, man for man, are as good as any in the world; that we hold a little more than our proportion of the world's records; that our planes, pursuit planes, and patrol planes, are good. If those things be so, what can be radically wrong with the Navy?

Commander Whiting: In the Navy, sir, we have no policy. I do not know what the Army's troubles are. In the Navy we have no policy with regard to the personnel, and that is not good.

Major General Harbord: It all comes down to a question of personnel and money, then?

Commander Whiting: Yes; the forces we have are very small, of course.

Mr. Coffin: And the thought that you have given to the development of aviation in the various branches, and possibly in the civilian as well, do you feel that if there is an Assistant Secretary of the Navy and an Assistant Secretary of War and an Assistant Secretary of Commerce charged specifically with dealing with the question of aeronautical development, and if you had proper representation on the General Board of the Navy and on the General Staff of the Army, and so forth, do you think this might go far toward meeting the feeling of dissatisfaction and the feeling of lack of representation that has been evidenced here before us?

Commander Whiting: Whether you need an Assistant Secretary for these three branches or not I do not know; but I do think that a very definite policy, drawn up after all sides have been heard in the Navy, will practically kill all unrest. Everybody will understand what they have to do and what their future is to be, and they will be satisfied. So far as civil aviation goes, I subscribe exactly to what Postmaster General New told the committee, and that is that they should have a Bureau of Aeronautics under the Department of Commerce; and Mr. Hoover also spoke that way. They understand exactly what is necessary.

Representative Vinson: You have discussed various problems of aviation with which this board must deal; with which this board will have to deal. First, the independent air force. You are against that?

Commander Whiting: Yes, sir.

Representative Vinson: Analogous to the Marine Corps; you are against that?

Commander Whiting: Yes, sir.

Representative Vinson: An out and in system advocated by the Bureau, and you are against that?

Commander Whiting: Very much.

Representative Vinson: And the plan that you have, that emanated from yourself?

Commander Whiting: Yes, sir.

Representative Vinson: What would you do with the 110 aviators in the Service who are not graduates now of the Naval Academy, under your plan?

Commander Whiting: They will go right along just where they stand.

Representative Vinson: And it might happen that after a while they would be up to command a ship with no navigation training at all?

Commander Whiting: That is exactly what is going to happen, and if you do not fire all those fellows out they will be running the Navy pretty soon, and I think they would be all right and competent to do it when they get up to that branch. They all had to pass an examination for entrance into the Service, which included navigation and steam engineering and electricity and ordnance and gunnery. They got most of it out of a book, but they passed the examination the same as all the other officers that came in; they took the same examination exactly. Now they serve aboard ship as assistant navigator, assistant engineer officer, watch officer, in addition to their aviation duty.

Mr. Coffin: What is the Navy doing toward building up a reserve in civil life; that is, are we training civil reserves on a basis such as the Army is doing, with regard to the Infantry and other land forces?

Commander Whiting: Yes, sir. We have a certain amount of money, a very small amount, turned over to us, and we have established units at various places; for instance, Boston and Hampton Roads. I am not thoroughly familiar with the details, but I know there are a very few places. At those places we train aviators, and the training is organized so as to organize a unit.

In addition to that we have a school at the Great Lakes in which we train our aircraft mechanics. It is a very good course of training, because

we find very few of them reenlist because of the demand in civil life for well-trained, skilled mechanics.

Mr. Denison: Are the new sights that were described to us the other day by an Army officer, and which are supposed to be very marvelous, in use by the Navy as yet?

Commander Whiting: No; nor are they in use by the Army. They are just coming into production now. They have been through their experimental stage, however. Bomb sights are five or six years away in perfection.

You have been told by certain people that 150 planes would be sufficient for the Air Service. I would like to point out to the board that the actual number of planes needed by the Air Service in the Navy would probably reach 500, and the number needed for an Air Force would be even larger than that; so that 150 planes would never do for the Air Service.

Representative Vinson: That is with the fleet?

Commander Whiting: Yes, sir; with the ships alone, not counting anything on the beach.

Mr. Coffin: And not counting the reserves?

Commander Whiting: I said 500 operating planes. That is, 10 years from now.

Mr. Coffin: And behind each operating plane you have to have a reserve?

Commander Whiting: Oh, yes.

FURTHER STATEMENT OF COMDR. PATRICK N. L. BELLINGER, U.S.N.

Commander Bellinger: I have prepared a statement which presents my views on the steps that should be taken to provide for a more efficient Naval Aviation Service.

Part I deals with the internal organization of naval aviation.

Part II deals with external policies affecting aviation.

PART I

I have expressed myself as favoring an Aviation Corps in the Navy, but what is really wanted is not a name but a proper organization which will insure definite handling of aviation and tend to prevent haphazard policies in dealing with a most important arm of the Navy. Naval aviation is suffering from too much attention from too many different sources.

The organization of naval aviation should meet the requirements for peace and the requirements for war. It should during peace time provide for the efficient preparation of aviation for war and necessarily for rapid expansion in a threatened emergency. To what extent such expansion will reach, and to what ends, can only be determined by the kind of war.

The policy of any organization is formulated principally by the head of that organization. How can aviation ever expect to have a definite, stable policy so long as the high commands in it are given to transitory officers, more or less unfamiliar with aviation? No commander can efficiently handle a weapon unless he is thoroughly conversant with all its inherent weaknesses and its inherent strength. However, although it may be very desirable in the future, I at present do not, on account of shortage of higher ranking aviators, suggest an organization commanded solely by naval aviators. But I do emphasize the necessity of its being commanded by officers who not only have been to Pensacola and have fulfilled certain requirements necessary by law but who also have been carefully selected because of their aptitude for aviation duty and then assigned to it permanently, not for a period of two or more years but to stay with it as their future career in the Navy.

Needless to say, no officer assigned to aviation would choose to remain with it permanently so long as in doing so he jeopardizes his future in the Navy.

If naval aviation is to progress it must be something that will offer an inducement to capable ambitious officers. By ambitious I mean the best type of officers, those who have the future of the Navy and their own future at heart.

Aviation, with all its various phases, has become more and more a career in the Navy to which an officer might well devote his entire attention.

By all means, the personnel in aviation, both officers and enlisted men, must be stabilized. Naval aviation not only requires specialization in the general subject of aviation but also in the different branches of aviation. Stabilization resulting in permanent detail should increase the knowledge and proficiency of the personnel and thus produce a more efficient Aviation Service.

With the development of aircraft, and as a consequence the development of air tactics, a greater amount of instruction practice and skill is logically to be expected; therefore, the time element required in the making of an aviator fit for war operation is bound to be increased. More concentrated effort should be exerted in the development of the strategy and tactics of the air. A school of thought for the study of strategy and tactics of the air as it affects naval aviation might be listed as one of the vital necessities. Only through such study can there be developed types of aircraft best suited to meet the needs of the Service and the most effective ways and means for their employment.

Another vital need to assist in the development of aviation material is a centralized and adequate experiment station for the design, test and development of all phases of aviation material and appurtenances. It is necessary to remove the spirit of unrest and instill contentment and an esprit de corps.

It appears desirable that within limits naval aviators should receive a higher rate of promotion than is now in effect. This is because of the higher death rate in aviation than in any other branch of the Navy and the desirability of eventually having aviators of command rank. A different line promotion list cannot very well be effected outside of a corps, for the simple reason that the necessary proficiency and requirements for promotion must be definitely set down and peculiar to the particular service.

In summarizing, it seems that the crux of the situation rests in the general subject of policy and personnel, and to build for the future and to improve the present condition of naval aviation I recommend the proper rules, laws and regulations be made to insure the following:

1. A definite policy and status for naval aviation as a combatant arm of the Navy.

2. That naval aviation be embodied in one organization, handling all aviation personnel and material.

3. That naval aviation be recognized as a definite and permanent career for officers and enlisted men of the Navy.

4. That there be established what may be termed a flight line, to determine succession to command.
5. That the command of aviation activities, including aircraft carriers and tenders, be vested only in officers permanently assigned to naval aviation.
6. That there be established a separate system of promotion for the personnel in naval aviation.
7. That at the time of reorganization of naval aviation the question of relative seniority of those officers already in aviation and those who afterwards may enter the organization be definitely fixed, in order that naval aviators may have some definite outlook for their future.
8. That there be established a school of strategy and tactics for naval aviation.
9. That there be established a naval aviation experiment and test station.

PART II

Naval aviation is part and parcel of the fleet. Much of it may not even be with the fleet, but nevertheless its employment is in relation to or in conjunction with the general mission of the fleet.

Naval air strategy has for its end to found, support, and increase, as well in peace as in war, the power of the Navy, and the very existence of this power in times of peace may prevent war.

The employment of naval aircraft in war divides itself into two general classes first, as a striking force, and second, as an auxiliary. The striking force carries out those operations in which its power is utilized to inflict damage on the enemy. Auxiliary employment includes all the activities within the capabilities of aircraft which assist surface forces in carrying on their tasks.

Naval aircraft may be divided into two general types: Those aircraft that are carried on board the various vessels in the fleet, and those which, due to their size or characteristics, cannot be carried on board ship but operate, in furthering the mission of the Navy, from tenders or shore bases.

These latter will be able to operate with the fleet more and more, depending on the advance made in their seaworthiness, their radius of action and their ability to be self-sustaining, and it seems logical to look for much greater improvement along these lines.

Should naval aviation be restricted only to those planes carried on board battleships, cruisers, and carriers, then the Navy will from year to year become less and less effective in its ability to assume its responsibilities.

In any future war aircraft will be employed by the thousands rather than by the hundreds. England at the beginning of the World War is said to have had only 150 aircraft fit for war purposes, but at the end of the war it is claimed that she had 22,000 aircraft and was producing them at the rate of 90 a day.

Army aviation, with a different management, different training and different mission, cannot be looked upon as an agency to supply the aviation needs of the Navy.

Skill and morale of personnel are factors that must be cultivated to the maximum in naval aviation. I cannot emphasize too strongly the necessity to prevent any future restrictions and to remove all present laws, policies or agreements that in any way curtail the development and employment of naval aviation in furthering the mission of the Navy.

Major General Harbord: I suppose you know that Colonel Mitchell was very strong for an independent air department at one time. And later for a Department of National Defense, presided over by a Secretary of National Defense?

Commander Bellinger: I do not hold with him, because in the general reorganization I doubt if proper weight would be given to the Army and the Navy. And in this reorganization, which is for the national defense, the two bodies that now exist might be severely damaged.

Major General Harbord: It was stated here that if the Air Service were properly supported, or if the air arm were properly developed, it might be that in future wars there would be no actual contact of Infantry; and that, indeed, it was possible that conscription of our young men might be entirely avoided in future if we had a sufficient Air Service.

Commander Bellinger: I do not agree with that statement. I think the wars of the future will be fought, maybe, principally in the air and much offensive work done by aircraft but it is to be backed up with surface forces, both on land and sea.

Major General Harbord: Is it not true that all this talk now about getting control of the air really means to enable somebody somewhere else to get control of the land thereabouts?

Commander Bellinger: The only way that aviation can function is by having elaborate ground facilities, and in order to have such elaborate ground facilities there must be a surface Navy and a surface Army. Control of the air is of no benefit unless you want to use that particular air for something.

Major General Harbord: What do you think of the probability of successful cooperation in war between forces that are not trained together in time of peace?

Commander Bellinger: If I viewed the two present arms of the national defense, the Army and the Navy, as working together, I doubt if it would be very successful.

Major General Harbord: In war you generally have to occupy country that belongs to the enemy before you win the war. Can an air force occupy any enemy territory, even against a fairly well organized ground enemy?

Commander Bellinger: I do not see how an air force can work in operations of that kind without the assistance either of an army or a navy. It must have the assistance of an army or a navy.

Major General Harbord: If they landed in a foreign country they could hardly keep out of the hands of the police?

Commander Bellinger: No, sir; they can strike only so far as they are able to go and return.

Senator Bingham: Colonel Mitchell has given the impression that people who are not in favor of that plan are more interested in preserving the Navy than in advancing aviation do you agree with that statement?

Commander Bellinger: Undoubtedly his scheme would advance aviation, in my opinion, more, perhaps, than any other scheme; but can the country afford to promote aviation at the expense of its Army and its Navy? Might not that be a very dangerous action in any reorganization of this kind?

Representative Vinson: Could it perform the mission of the Army or the Navy?

Commander Bellinger: No, sir.

The Chairman: And your feeling is that an independent air force, not a part of the Army and the Navy and not training with them, would lead

to the destruction of the Army and the Navy as effective fighting instruments?

Commander Bellinger: Yes, sir. And also the ideas that have been expressed in regard to not needing the Army and the Navy I do not think are sound.

Senator Bingham: Commander, in working out the defense of Panama or the defense of Pearl Harbor, how would you secure unity of command in the air?

Commander Bellinger: By having a senior officer in command of all the forces, Army and Navy; appoint some one definitely who would take command of the Army and Navy forces.

Judge Denison: Are you apprehensive that you may be transferred out of aviation into something else?

Commander Bellinger: For the last eight years I have been standing by; I have been advised many times by friends, higher ranking officers, that I had better leave aviation and go to other duty, merely for my own professional welfare in the Navy.

Judge Denison: Did that have a good effect on your state of mind?

Commander Bellinger: No, sir; because I made a decision that I would sink or swim with aviation. But I want to remain a part of the fleet.

STATEMENT OF CAPT. EMORY SCOTT LAND (C.C.), U.S.N.,
HEAD OF MATERIEL DIVISION, BUREAU OF AERONAUTICS

Captain Land said he was 47 years old, an Annapolis graduate, has been directly and indirectly connected with aviation for six or seven years. He said he knew of no naval aviators in favor of retaining the present system.

Senator Bingham: How many are in favor of giving the Chief of the Bureau of Aeronautics the same power over personnel and training as the Chief of the Army Air Service has today?

Captain Land: I think the large majority.

Senator Bingham: How many are in favor of establishing the Naval Air Service on a plan similar to that of Captain Westervelt?

Captain Land: I do not know. I think a great many are in favor of some such establishment, but I have no idea as to the numbers who are in favor of that particular scheme.

Senator Bingham: Or of a plan similar to that proposed by Commander Bartlett?

Captain Land: There are a number who are in favor of the so-called Bartlett scheme. Having signed the Bureau of Aeronautics personnel report, I stand behind it, and believe that it contains the solutions of some of the major number of our personnel problems. In making this statement I couple the report with the so-called Whiting inclosure to the report. As the committee is aware, this report has been through various channels of the Navy Department and is at present under consideration. If the attitude of the Navy Department turns out to be along the lines indicated in the first endorsement on this report, then I am unqualifiedly for a naval aviation line. This does not mean a service analogous to the Marine Corps, but one that is much more closely and intimately tied as an integral part to the Navy itself. Personally, I am entirely willing to abide by the judgment of your committee with regard to the report and its endorsements as submitted to you.

I should like to go on record that I am unalterably opposed to a change merely for the sake of a change; but I firmly believe in the present importance of naval aviation and I believe that it has greater future possibilities than any other branch of the naval service. It therefore is entitled to complete and full recognition, and if this can be obtained only by some form of minor separation, such as the line corps suggested, I believe that such a flight line should be established.

Testimony has been given to this committee by high-ranking officers of the Navy that rapid progress in naval aviation has been made and that taken by and large, naval aviation has done extremely well since the war. Those of us more intimately associated with the matter, while grateful for this testimony, do not believe that we have progressed as rapidly as we should, and we feel that there are a great many serious, complicated, and involved problems to be solved.

Aviation is in its infancy, but it is a lusty infant and demands attention and nutrition.

With regard to the development of material, criticisms have been made and probably will continue to be made with regard to the technical personnel in charge thereof. So far as personnel is concerned, my answer to the above criticism is a question, "Where are you going to get technical personnel more capable of developing aviation material than you have at the present time?"

I have just a word about designers.

Most of the world's best designers of aircraft have been flyers at one time or another during their lives. There are marked exceptions, but it is a fairly good rule to go by. Technical officers are necessary in design, assembly and repair, inspection and procurement. There should, therefore, be no bans put on them in any way, and if they receive the same training from a flying point of view as their fellow officers receive, they should be treated in the same manner. If naval constructors are assigned to naval aviation duties which involve flying, they should be given the same courses and be qualified in the same manner as their brothers in the line. They should be eligible for assignment to duty the same as other qualified officers, the only restriction being that of command afloat and this restriction should not apply to an airplane unit.

I would like to be very definitely understood there, that I do not think I should command afloat. I gave that up about 25 years ago. I belong to a corps, and I am proud of it. I do not know of any naval constructor who has any right to command afloat, or any other staff officer. But I do think that if he has the ability he should be eligible to command ashore.

Naval aviation demands fair play and a square deal. If the Navy Department will meet these requirements half way, no major changes are essential. If not, then some operation must be performed such as the establishment of a line corps, in order to produce the results desired by naval aviation and demanded by the people of the United States.

I have a few very brief conclusions. They are as follows:

I visualize that naval aviation will very soon be the most important arm of the fleet. I further visualize that it will in the near future dominate other features in the Navy, ultimately being the major branch, and will become the fighting line of the Navy.

There still remain in our military organizations and the administration thereof some of the elements of feudalism handed down from the middle ages. One of these elements is the fact that they are hide bound by prece-

dent. I want to see a state of affairs in our organizations where ability and not availability governs.

There are two remarkable examples of organizations in this country today in civil life. They are probably the two biggest corporations in the world—the A. T. & T., and the U. S. Steel Corporation. The fundamental stone on which these organizations have been built is specialization. I am a strong believer in specialization and consider that our progress can be readily made more rapid by more rather than by less specialization.

COAST DEFENSE

The good Lord made the dividing line—that is, the coast line. There is just as much logic in restricting the Army to 200 miles inland as there is to giving them control 200 miles out from the coast line.

LASSITER BOARD

One point raised in the Lassiter Board and the discussion thereof is the question of \$2 to the Army Air Service to \$1 to the Naval Air Service. There is no more logic or sense behind this argument than there was behind the 16 to 1 argument in 1896.

AVIATION ENGINEERS

We have some excellent men and are developing more. They have no superiors in the world.

I think in all the discussion that has been made here the fact has been overlooked that we have coming under some period from the regular line of the Navy, some in post graduate work, some of the best youngsters in gas engines and mechanics that there are in the country.

And I think that they are quite capable of taking their trick at it on board ship if such were found necessary.

THE BUREAU OF AERONAUTIC ORGANIZATION

I think it only fair to invite the attention of the committee to the fact that officers attached to the bureau represent every branch of the Navy except doctors and chaplains.

Aircraft production is divided into three phases, design, experiment and production, or design, flight test and production. I only second what Commander Whiting said about the way these designs are worked out, and also what he said about the length of time it takes to get it out of the brain of the designer to the operator of the fleet.

TWO THOUSAND POUND BOMB

If the question of carrying a 2,000-pound bomb across the Atlantic or Pacific is bona fide, the answer at the present time is in the negative. If, however, a plane is permitted to carry its bomb across the ocean by the Aleutian Islands in the Pacific, or via Iceland, Greenland, Newfoundland, and so forth, in the Atlantic, it might be practicable today, but it appears to be very doubtful.

Senator Bingham: What recommendations of the Personnel Board do you lay particular stress upon as being important?

Captain Land: The most important one is to determine and define a Navy Department policy for the future of naval aviators. That has been done in the Whiting plan by specialization when they are young and permanent assignment after 10 years. Coupled with that must go control of aviation personnel, training, and a certain control of the budget to the Chief of the Bureau of Aeronautics. I should say the major point in there is this definition of policy. The second one is assignment of the requisite number of naval aviators and the necessary personnel to take care of the authorized planes to go on the carriers which are coming along here in the course of a year.

Senator Bingham: What power or powers do you think should be given to the Bureau of Aeronautics for the betterment of naval aviation?

Captain Land: It seems to me to satisfactorily function that its power should be enlarged with regard to personnel and training. Its material powers according to my belief should be enlarged with regard to the budget.

Senator Bingham: What do you think of the claims that have been made regarding the possibility of doing serious damage to the City of New York under present conditions?

Captain Land: I will answer that the same as other naval officers would, that you have got to dispose of the United States Fleet with its Air Force before New York is in any danger, and then after that you have got the Army Air Force, and the Army auxiliaries and the Coast Guard, and so on, that would have to be disposed of before. I think that is a visionary and wild statement.

But my firm belief is that naval aviation is the first line of defense, that the Navy is the second line of defense, and that the Army is the third line of defense.

Representative Vinson: Do you think there would be any hardship or jealousies or bad feeling caused or dissatisfaction caused by making a commander at the age of 32 in the aviation corps and 36 in the line, or in your corps?

Captain Land: Why, they undoubtedly would have a little friction, but as long as the question of pay is not involved and it is a temporary thing, his classmate could catch up with him, that could readily be taken care of.

Representative Vinson: Do you think the line suggested in the Whiting plan is a fair, sane, proper line of training?

Captain Land: Yes; a very sane and very proper line.

STATEMENT OF LIEUT. CARLETON C. CHAMPION, JR., ATTACHED TO THE BUREAU OF AERONAUTICS, U.S.N.

Lieutenant Champion said he was 29 years old, learned to fly at Pensacola in 1922, has had nearly 1,000 hours in the air, and has flown practically every type of plane.

Senator Bingham: Are you in favor of giving the chief of the Bureau of Aeronautics the same power over personnel and training as the chief of the Army Air Service has today?

Lieutenant Champion: I am not, sir. I believe that that violates one of the fundamentals of military organization, unity of control. I can see no better reason for giving the Bureau of Aeronautics control over aero-

nautical personnel than I can for saying that the Bureau of Engineering should have control over all the engineering personnel of the Navy.

Rear Admiral Fletcher: If aviators are given general line of duties or one or two years in each grade and are detailed invariably to ships carrying planes and their flight pay is continued would their education as aviators suffer?

Lieutenant Champion: I do not believe it would. If anything, I think it would be slightly improved. Not their ability to fly, but their breadth of outlook. I think they would understand the working of the Navy as a whole and as a unit very much better than they would if they were continuously employed on aviation duty.

Representative Vinson: Lieutenant, are you in favor of a separate corps?

Lieutenant Champion: I am very much opposed to a separate corps. A temporary promotion list and a flight name are corps under another name.

I believe the entire unrest that is present now both in the Army and in the Navy is due to a very hopeless personnel situation for the younger officers who are the active pilots of today.

Representative Vinson: Have you any suggestions to offer how to eliminate that unrest?

Lieutenant Champion: I believe that will be eliminated. I do not believe any legislation is necessary except perhaps to provide permanent aviation duties for some people who are not qualified and not in a very good position to qualify for all the duties of a naval officer. I think that most of the troubles that have been mentioned here, the difficulties, are rather minor, and that they can be corrected by the powers already vested in the Secretary of the Navy or if necessary by Executive order of the President, and I believe that with aviation in its present state of comparative undevelopment in comparison with the other branches of the Navy it would be very much more desirable to correct the minor difficulties that exist now than to hamper aviation with additional legislation which may block further moves in the near future as they become apparent and necessary.

Representative Vinson: Then your idea is to let the Department work out the differences if they exist?

Lieutenant Champion: I believe that with the exception of the promotion for the future of officers in aviation not qualified for line duties the present system is probably better than any change we could go to. I do not believe we should consider now or at any other time a naval aviator as an aviator. He must be a naval officer if he is an aviator, or he is not a naval aviator. It takes six years of intensive training and study to qualify a man for a watch aboard ship. It takes about 18 months to take that same man and qualify him as a first-class naval aviator.

Representative Vinson: Then your idea is to first make him a naval officer and then if he wants to specialize let him go in any branch and specialize?

Lieutenant Champion: Let him take up aviation on exactly the same status that he would take up fire control work or radio or optical work or torpedoes or any other specialty that we have today.

Representative Vinson: What have you to say in regard to the line officers receiving a higher rate of promotion?

Lieutenant Champion: I think that would be the greatest mistake that we could possibly make. I think that there should be some provision made to straighten out the present hopeless condition in the lower grades.

Representative Vinson: You have got to do that by a higher rate of promotion, have you not?

Lieutenant Champion: The Army has it because most of their active pilots are away down at the bottom of a long list, and at the present time unless something is changed in the Navy there are approximately seven consecutive Naval Academy classes that should be retired. Those people that must be retired are the active pilots of today, and the people that would be just getting along to squadron commanders of aircraft and heads of departments aboard ship when they are forced up.

Senator Bingham: How large a percentage of the graduates of Annapolis could be made into naval aviators?

Lieutenant Champion: I think 35 percent is a very fair figure, provided that everybody that was physically qualified was given instruction. But I do not think you will find that many who will volunteer for aviation service at this time, and I am very much opposed to any system that would contemplate compulsory flying. I do not think at the present stage of aviation that it can be done.

Senator Bingham: Then you are opposed to the present policy of the Department in regard to training cadets to fly?

Lieutenant Champion: That is not, I understand, compulsory. If you are referring to the instruction given at the Naval Academy, that is an entirely different proposition. Those people are not being trained as pilots in any sense of the word.

Mr. Denison: Is it a fair construction of your view to say that you think that aviation is of no more importance in the Navy than fire control, as a specialty?

Lieutenant Champion: I do not think it is any more important, and I do not think it is any less important. Both of them are absolutely essential to the proper operation of the fleet as a whole. You cannot do without one any more than you can without the other.

Mr. Denison: Would you think there would be any reasonable probability that aviation will so develop as to displace what are now important parts of the Navy?

Lieutenant Champion: I do not think we are faced with that condition yet, and I do not think we will be for many, many years to come. I think if we do get to that it will be rather through a very gradual process of development. The battleship remains a battleship whatever it is, whether it is a trireme, a sailing ship, a modern dreadnaught, or an aircraft carrier, it is still a battleship, still the backbone of the fleet and still on the surface.

STATEMENT OF LIEUT. F. P. SHERMAN, U. S. N., ON TEMPORARY DUTY, OFFICE OF NAVAL OPERATIONS

Lieutenant Sherman said he graduated at Annapolis in 1917, learned to fly at Pensacola in 1923, and has had about 800 hours in the air.

Senator Bingham: Of the naval aviators with whom you have personally conferred, how many do you think are in favor of retaining the present system substantially in its present form?

Lieutenant Sherman: Not many, sir. Everybody wants a change. Some want a little change, some want a big change. It depends on what duty they are employed and how happy they are, and how well they like the commanding officer, and also on who has been talking to them.

Senator Bingham: Have you heard them discuss giving the Chief of the Bureau of Aeronautics the same power over personnel and training as the Chief of the Army Air Service has now?

Lieutenant Sherman: No; that has not been discussed very much, because every time we fly to an Army air station we gather that they do not like it very well, so no one has suggested being exactly like the Army.

Senator Bingham: How many would you say, of those with whom you have talked, are in favor of establishing a Naval Air Service on a basis similar to the Marine Corps?

Lieutenant Sherman: I should say that the officers with whom I have talked within the last six months, prior to leaving Pensacola last Wednesday night, represent, roughly, 10 percent. The corps idea is a little bit new. In fact, I read about it on the way up here in the paper. The day I left there was quite a lot of discussion as to the relative merits of a united Air Service as against things as they are, and the opinion was very, very much against the united Air Service. As I say, the corps idea had not then been thought of at all at Pensacola.

I have some suggestions for the improvement of the efficiency of the naval air forces. Air power can be exerted against an enemy nation in three ways:

First, in conjunction with sea power as an integral part of the fleet, operating against the enemy fleet, enemy fleet air bases, and ocean-borne commerce.

Secondly, in conjunction with military powers as an integral part of the field armies and fixed shore defense operating against enemy armies, fortifications, and land communications and resources.

Third, as an independent arm operating against enemy air forces, air naval and military bases, railroads, industrial and political centers, communications, and other national resources.

The matter of the administrative organization of the nation's air forces is a question to be settled by each country after considering its own peculiar problem. There are two general systems of organization in existence. One system is to organize an air arm independent of the Army and Navy, and have that air arm detail units to service with the fleet and armies. This method has both faults and virtues. It tends to foster the development of strategy, tactics, material and personnel for fulfilling the purpose of the independent air arm to the neglect of those in the military and naval air forces. It is to be noted, however, that the countries which have adopted this organization are those which are liable to air attacks before they are liable to attack by military and naval forces. In the case of the countries of continental Europe, whose first menace lies in the air, it is necessary to organize an air arm sufficient to meet and destroy the air menace.

I said that the pilots with whom I have talked are against a united Air Service for this country. I think we all agree that if we were in the same situation the British are, where some one can come over and drop a bomb on the nation's capital, that there would soon be legislation for an independent air arm to stop it; that the people would demand it.

In a case of the country whose menace lies over sea, the second line of defense is the coast defense, and after the fleet air forces and the coastal air forces are next of importance.

In the United States the situation is as follows: There is no prospect of the establishment of an air force by any potential enemy close enough to the vital centers of the country to enable the enemy airplane to attack. To defend the country against enemy airplanes is, therefore, primarily a naval problem, and the efficiency of the Naval Air Service is of paramount importance.

The Naval Air Service of this country is an integral part of the Navy. The military Air Service is an integral part of the Army, and there is no independent air arm, the functions of an air striking force being assigned to the Army Air Service. I believe this situation is as it should be, and would consider the establishment of the proposed united Air Service as a national calamity.

There have been proposed before this committee many schemes for improving the efficiency of the Naval Air Service. I do not believe that any one change in the system of administration would produce any startling changes in the efficiency of the Navy. After all, the efficiency of the fleet and its component parts, of which aviation is merely one, depend largely on the people in it, of the knowledge, skill and zeal of its operating personnel, and of the ability of its designers and material specialists.

An aviation corps or naval service would have certain definite advantages and also certain disadvantages. It would give naval aviators more rank, promotion and pay, and would thus raise their morale immediately. In time it would render them more skilled in their specialty as aviators, but would render them less suited for general naval duties and less eligible for high command. At the same time, it would definitely prohibit the Navy from ever reaching the point where the officers in positions of high command have had aviation experience, which seems to me to be absolutely necessary.

In connection with the promotion of aviators, it must be remembered that the promotion of one group of naval officers past another group amounts to the demotion of the latter group. Such a course will inevitably cause jealousy, resentment and pessimism among the officers passed over. I feel that my flying experience has done much more to advance my knowledge of naval warfare in general than any other form of duty could possibly have done. I do not feel that I should be further rewarded by being promoted over the heads of officers senior to me who have been doing their duties efficiently and well. If we could all be promoted together at a faster rate than at present is possible, it would be fine business.

In this connection I might say that prior to being detailed as an aviator I was detailed as commander on a destroyer. I never even heard anybody suggest that we be given even a temporary rank as commander. I do not believe it is any more necessary to be given temporary rank as lieutenant commander if I should be ordered to command an air squadron. After all, rank is supposed to be a measure of experience. I know how the other people in the Service feel about this. They feel, and rightly so, that promoting aviators just means so much of a step back to them. You can provide for a big line of flying captains, but the people in the country will only stand for paying so many captains in the whole Navy. The more of them that are flyers the less of them will be line officers, and that is what the people in the line of the Navy are interested in.

The cry of many naval aviators today is that they want the assurance of future promotion. In any organization, military, naval or industrial, there must be some form of selection for elimination. Otherwise inefficiency and stagnation will surely result. I therefore feel that it is absolutely impossible to guarantee a future provided with rapid promotion with a high rate of pay to every aviator. It simply cannot be done.

I fail utterly to see why a naval air force should provide that a naval constructor who has spent years on shore duty should be given a peculiar

status as a line officer with a preferred position for promotion, and thereby rendered eligible for command of the biggest and most valuable ship the Navy possesses. Such a proposal is absurd on the face of it. An aviator has to be a good physical specimen and possess at least average brains. But there is nothing superhuman about him, and he cannot efficiently perform the line functions of command of surface ships at sea unless he is trained in the same way as any other line officer. Furthermore, an aviator will not be ready to command a capital ship at any earlier age than a line officer who spends his life learning how, no matter how many stripes are sewn on his sleeve. I have never heard any theory that practice in flying produced any superior mental ability, and therefore do not believe that officers on flying duty become eligible for higher rank any more quickly than their brother officers.

In order to provide for the officers in aviation who wish to specialize absolutely, due either to their own desires or to their lack of sea-going experience, it would be well to establish in the line a list of officers for aviation duty only, similar to the existing list for engineering duties only.

The oft repeated criticism of the present situation is that fliers are commanded by non-fliers and there seems to be a well established practice of blaming all the shortcomings of the present system on this one phase of it.

In this connection I would like to say that so far I have served under three different captains in the line who were not naval aviators, but in every case they have soloed land planes and seaplanes and have spent as much time in the air as they could spend and they apparently enjoyed it; they had managed to fly alone without breaking up much material and without hurting anybody. So I think that the criticism of the non-flier is a little bit misleading to people who are not familiar with the actual situation.

The administrative organization of the naval air forces must provide for the following essential points:

(1) The fleet must be provided with air units whose officers possess knowledge and skill in the use of aircraft at sea warfare.

(2) The fleet must be provided with air units whose material is of the greatest possible efficiency.

(3) The officers in positions of high command and their operating staff must possess a maximum of knowledge and skill in the aerial as well as the surface and sub-surface aspects of sea warfare.

I believe that aviation personnel should be handled only by the Bureau of Navigation just as the personnel of submarines and other specialists are handled. Aviators should be ordered to sea duty on cruising ships sufficiently often to keep them efficient and eligible for commands at sea. This is particularly essential in the case of those officers of little or no experience prior to their detail as naval aviators.

We have three general types of naval aviators with respect to experience. First we have the old time fliers who have done nothing but aviation duty for many years, and therefore uneasy about their naval future.

Next we have the officers who joined the Navy during the war, not as line officers, but as members of the Naval Flying Corps Reserves. These officers must be provided for by special legislation.

Last we have officers whose aviation duty and general duty have been evenly balanced so far and who are eligible for and capable of any type of duties required. This class forms a numerical majority at present, but unless some step is taken to provide for their future training they will gradually become fit for aviation duties only. The third class becomes the first class unless they are prevented.

My plan for remedying the officer personnel situation in naval aviation is this:

(1) Train all graduates of the Naval Academy at sea in capital ships for two years, and at the end of this time qualify the number of pilots and observers needed.

(2) Allow any aviator who so requests to be carried for aviation duties only.

(3) Establish requirements as follows for promotion to a higher grade in the line of the Navy. This applies to all line officers:

(a) The officer must have served at sea a total of at least two years since last promotion.

That provision is in force with every officer in the line.

(b) The officer must have served at sea at least one year in general duties since last promotion.

By general duty I mean duty where, out of 12 hours in a day, some 7 or 8 are spent in something that is not aviation.

(c) All officers of the line must qualify by examination in:

Strategy, major tactics, military and international law, seamanship, navigation, communications.

(d) Each officer of the line below the rank of commander must also qualify in the following subjects as applied to type of specialty, air, surface, or sub-surface:

Construction and maintenance, engineering, ordnance and gunnery, minor tactics.

(4) Provide for the permanency of the flying detail of aviators up to the rank of commander in order to maintain their proficiency as fliers. The aviators during their general duty can be allowed to fly the planes available in the fleet in port, even though they have no other duty connected with aviation. This matter is vitally important and would save the Treasury thousands of dollars in the long run.

(5) Train all officers selected for flag rank as naval aviation observers.

That last provision will mean that no officer will serve in command except a naval aviator or observer, and will preserve the flight chain of command up to commander-in-chief.

Representative Vinson: You stated that you were opposed to promotions for the aviation branch of your service, that is separate promotion.

Lieutenant Sherman: For the interest of the country I am. If any one offers to promote me, I will be right there to get the commission.

Representative Vinson: But you do advocate general promotion for the whole line of the Navy?

Lieutenant Sherman: I advocate such elimination as will give a man the ordinary chance. In other words, if only one man out of a hundred is going to be an admiral, I believe in giving everybody a hundred to one shot, and not restricting it to a few.

Representative Vinson: You would restrict it to the captain class, would you not?

Lieutenant Sherman: I believe in selection down to the grade of lieutenant.

Representative Vinson: Do you think if the selection was carried down beyond the rank of lieutenant commander, where it is today, that that would give general satisfaction in the aviation branch?

Lieutenant Sherman: Yes, for this reason: By the time an officer has had some 14 years of commission service he has had enough so that people can select fairly, and at the same time he is young enough to go out into the world and try to get along as a civilian.

TUESDAY, OCTOBER 6, 1925

STATEMENT OF LIEUT. DONALD CARPENTER, U.S.N., NAVAL AIR STATION, PENSACOLA, FLA., AS OFFICER IN CHARGE OF THE GROUND SCHOOL

Lieutenant Carpenter stated he is 31 years of age, graduated from the Naval Academy in 1916, served on battleships for a time, British Grand Fleet during the war; continuously on sea duty since 1916, with the exception of nine months for aviation training, has had over 500 hours in the air.

Senator Bingham: Do you know of any acute dissatisfaction among the personnel in the Navy Air Service?

Lieutenant Carpenter: I do, sir, but that dissatisfaction is not confined to the flying personnel; it is general throughout the Navy.

Senator Bingham: Are you in favor of retaining the present system?

Lieutenant Carpenter: I am in favor of retaining the present system, with certain modifications. I firmly believe that aviation is far too important a subject to be limited to the minor position implied by a corps. I would compare the present situation with the change from sail to steam in the old Navy. If aviation is as important as we believe it to be, it is easy to conceive that 20 years from now may find the extent of aviation to be greater than that of surface and subsurface ships. The recent establishment of a course of aviation training at Annapolis is an excellent start in the right direction of teaching the subject to all officers of the Navy. I would go further and require all candidates for the Naval Academy to pass an aviation physical examination, and to volunteer for aviation duty as a requirement for entrance.

In a few years, then, we would reach the condition of being able to detail officers to aviation training as is now done to any other duty in the Navy. I would require every officer who is ordered to command any ship or unit of the fleet containing aircraft to qualify as a naval aviation observer at Pensacola before assuming such command.

As regards the sea training of an aviator, it is necessary to state here that flying ability is quickly lost without practice. In this it seems to differ from most other human endeavor. I have noticed a distinct loss of skill on the controls after only one month's rest from flying. I believe that aviation should be better taken care of as regards insurance. The continuation of flight pay to dependents would be one possibility, or the opportunity to increase War Risk Insurance to twenty or thirty thousand dollars would be another. This point is important for the benefit of aviation morale as civilian insurance is absolutely barred to flyers.

For duty, I would assign each aviator one year in each five at sea in a strictly non-aviation assignment and two additional years at sea in aviation duty. The non-aviation duty will allow him to concentrate his efforts on the seagoing job and his flying status will enable him to retain his flying skill. When at sea on aviation duty he will also be able to keep in touch with ship handling, but as his major interest will be in aviation lines he cannot be expected to neglect this interest and learn as much of surface craft operation as when that is his paramount duty.

It is impossible to make a better officer by adding more stripes. There is no need for a certain definite number of stripes to fill a certain job. Therefore, I cannot see the reason for special promotion of any aviators which in effect must result in demotion of other officers who are pushed down to make room. I would certainly pick the best talent in the Navy for positions of higher command in air forces, as the art is new, developing rapidly, and has proved so far to be difficult to handle.

Certain officers now in aviation have had no general line experience and others have been away so long that they feel diffident about resuming general line duties. I would take care of such officers by allowing them to select aviation duty only, as we allow officers to elect engineering duty only. They would then advance with their running mates, those now just above them on the list, but would never command, due to lack of general Navy experience. Above all, I would certainly not split the Navy into two combatant groups with resulting dissension and dissatisfaction.

The greatest friction at present seems to be in the Navy Department, and undoubtedly there is cause for the dissatisfaction expressed by both sides of the present controversy.

It is my belief that the majority of this friction is due to the "show me" spirit of old age and conservatism on one side, and the "enthusiasm of youth" on the other. The War College uses hundreds of planes in working out its problems, and ascribes to them capabilities which I, as an aviator, am sometimes inclined to doubt. The success of aircraft spotting is unanimously commended by the fleet, and loss of accurate aircraft spots would be regarded as catastrophic to naval gunnery.

It would seem that many small troubles and some larger ones have driven an impetuous aviation group to desperation and that they are willing to accept a corps as a panacea of all existing ills.

There are additional reasons for the advancement of a corps idea which I regret to say do not appear to be entirely unselfish. Promotion throughout the entire Navy is a subject of ever-increasing worry. Many officers are to be retired due to age and grade and are alert to seize any opportunity to escape such enforced retirement. This situation is not confined to aviation, but is general. The proposed corps is the only avenue of escape from enforced retirement for some aviators who are sponsoring the corps.

Certain naval constructors who are already advanced to seniority over their Naval Academy classes see in the proposed corps a method of returning to the command branch of the Navy with further benefits.

In my opinion almost all adherents of the corps idea are given a strong, if not deciding impulse, in forming their opinions by the allurements of increased rank and pay.

A naval aviator must be first a naval officer, to thoroughly understand the Navy, if he is to be of value in helping the Navy as a whole to victory.

I am absolutely against a corps because the combatant forces of the Navy must be of one breed, one thought, one training, and one mind to insure victorious teamwork.

Senator Bingham: It has been testified here that only about 30 percent of the Annapolis graduates could qualify.

Lieutenant Carpenter: Senator Bingham, it is true that they could not qualify, perhaps, as aviation pilots, but what we need in the air is naval officers with knowledge of the Navy, and if we can train a pilot to take him in the air, in many cases the naval officer can serve just as well, whether he can handle the controls or not.

Senator Bingham: Do you believe that it is further necessary for officers to continually have flying?

Lieutenant Carpenter: Absolutely necessary, sir.

STATEMENT OF WALLACE M. DILLON, LIEUTENANT, U.S.N., ATTACHED TO THE FLYING DIVISION, BUREAU OF AERONAUTICS, IN CHARGE OF TRAINING, SPECIFICALLY CHARGED WITH RESERVE TRAINING

Lieutenant Dillon stated he graduated from the Naval Academy in 1917, served with the armored cruisers during the war, entered aviation in December, 1920, serving on the Langley, as a watch officer, and as flight officer, and as pilot, has been about 615 hours in the air, and has flown practically all types of planes.

Senator Bingham: Have you known of any acute dissatisfaction among the personnel in the Naval Air Service?

Lieutenant Dillon: Much of the unrest among naval aviators is due to the extreme uncertainty of their careers. This condition of uncertainty is brought about by a fear of failure of promotion due to the number of years served in the aviation game. Coupled with this is the probable personnel legislation which contemplates the separation of an officer from the service after 14 years with a relatively small bonus, to start life anew. This uncertainty is not conducive to peace of mind and contentment.

Also considerable effort has been expended by some nonflyers to abolish flying pay. Such attempts to abolish flight pay are not conducive to that spirit of loyalty to headquarters which is so necessary. In actual fact, it breeds distrust.

Not stopping at taking away flight pay, recommendation has been made to take away part of our uniform; that is, our wings. It is freely admitted that an aviator is inordinately proud of his wings.

Senator Bingham: From the point of view of the aviators, what do you think of retaining the wings?

Lieutenant Dillon: I think they signify certain accomplishments of which the aviator is justly proud of attainment. They are the insignia of the fraternity of the air and as such cannot be dispensed with without a feeling of personal loss. The pilots are proud of their wings and they have been given the wings for flying, and they want to retain them.

Senator Bingham: Of the naval aviators with whom you have personally conferred, how many do you think are in favor of retaining the present system substantially in its present form?

Lieutenant Dillon: I should say not more than 10 per cent. Last Winter during the hearings before a congressional committee a census was taken among the naval aviators both on the battle fleet and the scouting fleet and among the air stations. That census showed that about 90 percent of the aviators desired a change of some sort. Most of the Naval Academy men wanted to adopt a corps or similar plan, something which would bring them certain things. The ex-reserve officers desired a separate air force, and that is divided up into about 60-40, sir.

Senator Bingham: What is your own feeling with regard to the best way to improve aviation in the Navy?

Lieutenant Dillon: What I would like, sir, is what we might call a corps to train or the nearest analogy. Commander Whiting's plan and Commander Bartlett's plan approach this. They both have a plant, and it would be a combination of both. I mean either plan would give us what we want, sir; would be satisfactory. A corps plan I do not think would give us command of the carriers, and I feel that naval aviators should have command of the carriers.

It is my deep and firm conviction that the art of aerial warfare will never be developed to its maximum efficiency under the present system of administration. The air problem is a real problem and not just immature fancies on the part of impatient young men.

On July 1, 1921, there were 370 naval aviators carried on the lists of the Navy. On July 1st of this year there were 382, or a net gain of 12 during the last four years. Today we are no better off as far as the number of personnel is concerned than we were four years ago.

Among the powers that be there is no conception nor recognition of aviation as a striking force. As a result of this, and an acute shortage of personnel, we have an insufficient number of fighting and bombing squadrons. Those pilots which we now have attached to these squadrons are excellent, but their knowledge of air tactics and major air operations is extremely limited. In preparing ourselves, I do not advocate building a huge air force—but the force we must have must be trained to its maximum efficiency and at least have some knowledge of the tactics and operations with which we will have to cope.

This we have not; and such development as is being made is extremely slow.

I personally believe that the Naval Air Service should have an organization for administration which would enable naval aviation to have: First, its own budget; second, administration of its own personnel; third, charge of its own operations; fourth, charge of its own training; fifth, its own promotion list, and, sixth, a homogeneous, high-spirited, well-trained body of fighting air men, capable of meeting any emergency or exigency that might occur.

To successfully carry out missions in this new development, our aviators must be thorough-going and proficient airmen. A great many people do not believe it, particularly in the branches of the older services. The question of being airmen first and seamen or soldiers second should be perfectly obvious. For example, if there is a task to be performed at sea, we do not appoint a soldier or marine to do it, even though he has some ability in that direction; but a capable seaman is assigned to the job. Therefore, it seems quite natural that if there is a task to be performed through operations in the air, a qualified airman should be assigned that duty. To me that appears to be quite sound logic.

In order for air power to be effective and assume some of the functions of sea power, three indispensable conditions must be fulfilled, namely: First, the knowledge which enables men to dispense with landmarks and strike out through the heavens over land and the open sea; second, aircraft which can keep the air in all weathers, and, third, an armament which will enable a comparatively small body of men to develop sufficient force to annihilate, or at least cripple, an adversary at a distance.

At the present time one of these conditions is being filled fairly successfully, that is, delivering a blow with the bomb. Advocates of the big gun

naturally claim superiority for their weapons. In the other two conditions airmen are becoming more and more proficient each day.

Since the close of the World War aircraft have made such gigantic strides that they now constitute a real menace to the heavily armored, big gunned ship. The safety of this giant against under-water attack from the "terror of the seas" depend upon and rest entirely upon the effectiveness of the screens of destroyers and cruisers. Since surface craft can only travel in two dimensions, how will they meet the attack of craft that travel in three dimensions and are faster? The answer is, as the history and development of our Navy has shown, by meeting the attack of aircraft with aircraft.

At the present time aircraft unsupported by surface ships cannot reach our shores, neither can a successful air offensive be waged without surface vessels. How then can the dominance of the air be brought to bear on the open seas? The answer is, By the use of aircraft carriers! In other words, a floating airdrome. At the present time considerable difference of opinion exists as to what the future type of carrier will be.

There appears to be two distinct views; one which favors the larger tonnage and the other believing that three ten-thousand-ton ships would have very decided advantages over the larger carrier.

The effectiveness of a carrier will, to a large extent, depend upon the effectiveness of bombing operations. Aircraft flying in formation will undoubtedly make a large percentage of hits against surface vessels and targets on the ground.

In my opinion, only one direct hit of a 2,000-pound bomb will put any ship out of commission; for a bomb landing on board will probably knock down the spotting tops, the smokestacks, the radio, and wipe out the anti-aircraft batteries. This opinion is based on the effect of one 1,100-pound bomb on the Alabama.

STATEMENT OF LIEUT. COMDR. M. A. MITSCHER, BUREAU OF AERONAUTICS, U.S.N.

Lieutenant Commander Mitscher, 38 years of age, graduated from the Naval Academy in 1910, served for four years on several armored cruisers, then for a year on destroyers, entered naval aviation in 1915, has had between 1,500 and 2,000 hours in the air, and has flown 50 seaplanes and landplanes, was the pilot of the NC-2 across the Atlantic.

Senator Bingham: Have you known of any acute dissatisfaction among the personnel in the Navy Air Service?

Lieutenant Commander Mitscher: I have tried to make an analysis of the situation as it has been reported to me by the naval aviators, and I believe that it amounts to principally that fact that the naval aviation officer feels that aviation has assumed a fixed and important position in the general scheme of warfare, particularly naval warfare, and must be carefully considered as to its offensive value as well as its defensive value. He feels that it is important enough to be commanded by personnel experienced in aviation matters and who know, will appreciate and can advance the viewpoint of the flying man.

Senator Bingham: How many naval aviators are in favor of the Whiting plan?

Lieutenant Commander Mitscher: I think, generally 90 percent of them are in favor of some plan similar to the Whiting plan.

Senator Bingham: And how many are in favor of Colonel Mitchell's idea of a united Air Service?

Lieutenant Commander Mitscher: I should say very, very few of them, sir.

Senator Bingham: What is the condition of material in the Naval Air Service today; is it as bad as some people would have us believe?

Lieutenant Commander Mitscher: As head of the planning division, sir, it is my duty to draw up the plans for naval aviation, which involves the program of development of planes. As far as our material situation is concerned now in carrying out that plan, I think that it is as good in this Navy as in any other.

Senator Bingham: Will you give us your personal opinion with regard to the best means of improving aviation in the Navy?

Lieutenant Commander Mitscher: I am of the opinion that a policy of permanent aviation duty to be adopted which will permit the Navy to have the continued advantage of experienced men in charge of aviation affairs, similar to the one submitted in Appendix B of the Personnel Board report. That is in general, Commander Whiting's plan.

I am for a system of permanent aviation duty in the Navy under the Chief of Naval Operations and not directly under the Secretary of the Navy.

Senator Bingham: In other words, it is your feeling that if the Naval Air Service could have the same kind of organization that the Army Air Service has today, it would clear up most of the difficulties?

Lieutenant Commander Mitscher: Yes, sir; I think it would, sir.

The Chairman: How would you meet the problem of the high command, of avoiding the command of flying men by nonflying men?

Lieutenant Commander Mitscher: You could not avoid that, sir. The higher commands must be commanded with the present organization of the Navy by men who have had a general rotation of duty, sir, and the naval aviation officer should build up to the command of carriers and aircraft tenders in the air, but the higher command would have to be held by the general line officers until such a time as aviation has demonstrated its importance and has replaced certain important units of the fleet.

Mr. Durand: Do you think, Commander, that naval aviators, generally, would be readily content to find themselves removed from the line of promotion to what we call high command?

Lieutenant Commander Mitscher: That all depends on the individual. Mr. Durand, I believe that some of them aspire to be commanders-in-chief, and they should get the aviation experience and then go back to the general line and prepare themselves for that.

Mr. Coffin: Do you remember how many men you started with in 1917 who could actually fly, approximately?

Lieutenant Commander Mitscher: I do not think there could have been more than 30, sir.

Mr. Coffin: And how many did you have on January 1, 1919?

Lieutenant Commander Mitscher: I believe it was between two and three thousand.

Mr. Coffin: And assuming your equipment as of this date, the personnel, I refer to particularly, in the actual event of war, approximately what expansion would you expect within the first 12 months?

Lieutenant Commander Mitscher: Three thousand, I think that we would expand to immediately upon the declaration of war, sir.

Mr. Coffin: And you have approximately, how many now?

Lieutenant Commander Mitscher: Around 400, sir.

Mr. Coffin: What definite policy is being adopted by the Navy to train during peace time and reserve personnel in order that the confusion, which is well known to attend the declaration of war, should not interfere with the efficiency of the men brought into the service?

Lieutenant Commander Mitscher: We are assisting in so far as we can with the appropriations that we have and the reserve training stations in which we train the reserves and reserve pilots. We are taking the men right from college, sir; that is, the college boys, about 18 years to 28.

Mr. Coffin: Have you a system for a certain percentage of freshening each year?

Lieutenant Commander Mitscher: We recall them to active duty for fifteen to thirty-day periods, and assign them to our regular operating stations, and some of them to the fleets to train.

STATEMENT OF LIEUT. COMDR. A. C. DAVIS, BUREAU OF AERONAUTICS, U.S.N.

Lieutenant Commander Davis, 32 years of age, graduated at Annapolis in 1915, on duty on battleships and destroyers, qualified as aviator in 1924, flown 530 hours in 15 planes.

Senator Bingham: Commander, do you know of any acute dissatisfaction among the personnel of the Naval Air Service?

Lieutenant Commander Davis: Yes, sir.

Senator Bingham: Do you agree with them as to its courses?

Lieutenant Commander Davis: Yes, sir.

Representative Vinson: I gather from the testimony I have heard that these are some of the dissatisfactions:

- Junior rank of aviators on mixed boards.
- Personnel shifted about.
- Insufficient flight service.
- Not getting proper weather reports.
- Not getting proper flight clothing.
- Insufficient rank to get what you need from the supply service.
- Not enough enlisted personnel.
- Instable transportation service.
- Faulty inspection by general officers.
- Hot quarters in Texas.
- Cold quarters in Michigan.
- Outranked by fliers of less air experience.
- Killed twice to get promotion.
- Insufficient water to keep the dust down.
- More power in foreign stations than at home.
- Dusty and windy in Texas.
- Not enough planes.
- Lack of tactical training.
- No central control.
- Lack of sympathy on the part of nonfliers.
- Unfavorable grades.
- Navy gets more money than Army.
- Lack of funds.
- Jeopardy about losing flight pay.
- Uncomfortable uniforms.
- Nonfliers in command.
- Construction Corps not allowed to wear wings.
- Construction officers have no future in their corps if they stay in aviation.

The psychology of aviation requires a separate corps.

Do you know of any other acute dissatisfaction?

Lieutenant Commander Davis: Those are more than I have information of. I was referring as to general dissatisfaction to the fact that the personnel situation was not stabilized.

Mr. Coffin: You mentioned the matter of improvement in bomb sights. Tell us what you think about the accuracy of bombing done now, under present conditions, with the improved sight.

Senator Bingham: Are you in favor of Colonel Mitchell's plan of a united Air Service?

Lieutenant Commander Davis: No, sir. I do not see how anybody could be in any branch of the Navy without realizing that you cannot manage naval warfare with divided command.

The Chairman: Do you know of any plane that could carry a 2,000-pound bomb across either the Atlantic or Pacific Ocean by the shortest route?

Lieutenant Commander Davis: I do not know of any plane today that could carry a 2,000-pound bomb more than 600 or 800 miles at the most.

STATEMENT OF CAPT. H. E. YARNELL, U.S.N., COMMANDING THE AIRCRAFT SQUADRONS OF THE SCOUTING FLEET

Captain Yarnell graduated from the Naval Academy in 1897, served on the U. S. S. Oregon during the Spanish-American War, served on all types of warships, officer Naval Air Station, Hampton Roads, 1922 to 1924, has flown 280 hours, but is not a qualified pilot.

Senator Bingham: Will you tell us something about the way in which aviation worked, and some of the difficulties that were met with, difficulties of coordination in the Hawaiian maneuvers?

Captain Yarnell: The naval planes that took part in the Hawaiian maneuvers consisted of 12 scouting planes, 12 torpedo planes, which belonged to the aircraft squadron of the scouting fleet, and about 10 planes from the Naval Air Station at Pearl Harbor. These planes were used as scouting and bombing planes, and the scouting planes covered the area from Honolulu out to sea 150 miles. The torpedo and bombing planes were used for auxiliary scouting in the neighborhood of the islands, for dropping flares at night to illuminate any enemy approach to the coast, and finally on the last day of the maneuvers all planes took part in the combined Army and Navy attack on the landing force of the enemy.

No difficulties were experienced during these maneuvers.

With regard to cooperation, the Army squadrons were commanded by Major Brant. But their planes were, of course, directly under the command of the commanding general, and in the operations that they took part in could have been directed by him, and were.

My planes were directly under the command of Admiral MacDonald—not directly, but, through me, under him.

The night of the first day of the maneuvers the commanding officer of the Army planes came to me and made the suggestion that the Army and Navy planes make an attack on a number of imaginary planes that had been landed by the enemy on the Island of Molokai. When this suggestion was made the main fleet of the enemy had not been located, and the carrier

Langley had not been located, and as my task with the naval planes was to scout the approaches to the islands in order to locate the forces, I did not deem it advisable to change that mission; in fact, I would not have been able to change that mission without the authority of Admiral MacDonald. I so told the commanding officer of the Army air forces, and the matter ended there.

Senator Bingham: Captain, the President has asked us to make a study of the best means of applying aircraft in national defense. You have a long and brilliant record in the Navy, and you have had experience with aviation. Will you give us such constructive ideas and suggestions as occur to you with regard to this matter the President has asked to study?

Captain Yarnell: Aviation now is an arm of the fleet, and is being developed as such. The machinery for developing it is in the Bureau of Aeronautics of the Navy Department. I could make no recommendation which would improve the method of design in the Navy.

I am opposed to a corps, and this dissatisfaction which is spoken of amongst aviators of the Navy, I think, is not confined to aviators alone. There is general dissatisfaction in the lower grades of the Navy, especially in the classes of 1919 and below, due to the fact that there is a huge hump in there based on the 1,200 officers brought in at the close of the war. And the bulk of those officers are exempt from the retirement clauses which affect other officers. So the result is that all these classes of 1919 and below are absolutely blocked.

I think the general feeling among the older officers of the Navy is that aviation is invaluable, that it can not be separated from the Navy. It has taken its part in the fleet.

There is the question of status of aviators, as far as their duties are concerned. They are specialists and spend a large portion of their time in aviation. But if they are going to be naval officers they must have general knowledge of other naval duties. And they can only obtain that knowledge by performing these other duties on board ship, which would require that after a certain number of years in aviation they must spend a year or so either as engineer or navigator or executive officer, and finally in command of ships.

With regard to the reserve aviators who came in after the war, it is probable that special legislation will be required in their case. A number of them are qualified as naval officers. A number of others, through the fact that they have done aviation duty only since they entered the service, probably could not qualify as regular line officers, and I would suggest that they be given extra numbers, or allowed to continue on permanent aviation duty as long as they remained in the service.

In this question of nonflying officers there are about five positions in the air work of the Navy at present commanded by nonflying officers: command of the air squadron scouting fleet, command of the air squadron battle fleet, and there are four air stations, I believe. I will speak only with reference to the scouting fleet air squadrons, which I command. That has been for seven years under the command of four officers: Captains Steele, Johnson, Gherardi, and myself. During those seven years these squadrons have flown every year to Guantanamo and Culebra or Panama, and recently they took part in the Hawaiian maneuvers. And in every case they have won the unqualified approval of the admiral under whom they served. They have taken part in certain activities all the way from Greenland to Panama. During this period, of over six years, there has not been a single casualty in the planes while engaged in regular flight operations. Such results could not have been obtained if the chief in charge of the squadron was not well qualified to handle the matter. One reason a senior officer was put in command was because it involved command of ship, and those officers placed there were capable of command of ships.

My predecessors in the command I now hold, Captains Steele, A. W. Johnson and Gherardi, are among the ablest officers in the service—they are naval officers and seamen first, and they could not have been successful in their commands otherwise. Of Captain Johnson, Admiral Bayly, Royal Navy, who commanded at Queenstown during the war, said that he was the only 100-percent naval officer that he had ever met. Coming from Admiral Bayly, who was one of the ablest of British officers, that is high praise.

The ocean is no place for amateurs. If our naval aviators are not seamen they will be of little use in any naval operations.

The ordinary routine of obtaining this experience at present is in the subordinate duties on board ship and in command of submarines, destroyers, gunboats, cruisers, and finally battleships.

I think I am correct in asserting that the design of aircraft in the Army and Navy has been entirely in the hands of aviation personnel from the beginning.

Here is a fact which it is well to bear in mind; in perhaps no other sphere is there such a discrepancy between design and actual performance as in aircraft. An excellent paper design with remarkable characteristics of radius, speed or useful load may be a flat failure when actually constructed. That has actually happened.

What will become of the older officers in an aviation corps? The actual flying of planes is a young man's game. After forty a man is out of it as far as flying is concerned. That is, I mean, command of a squadron.

There will not be administrative positions sufficient for all of the older officers, and these officers in command will grow conservative, become out of date, and be obstacles to progress, as is alleged to be the case in the Navy today.

One witness before this board made a brief allusion to the cost of aviation. As an example, the following data regarding the squadron which I command are offered:

The squadron consists of three tenders, Wright, Sandpiper, and Teal, and two squadrons of 12 planes each.

The actual cost of operating these vessels and squadrons is approximately as follows. This is per annum: Wright, \$900,000.00; Sandpiper, \$110,000.00; Teal, \$110,000.00; gasoline and stores for planes, \$200,000.00; a total of \$1,320,000.00 for 24 planes, or \$55,000.00 per annum per plane.

This does not include depreciation of the planes, which would amount roughly to \$200,000.00, or the depreciation of the vessels.

The two squadrons are now equipped with planes costing \$30,000.00 each. A liberal life for a plane is 500 flying hours. Depreciation for every hour in their air is \$60.00. Add to this the pay of the crew, the cost of the gasoline, oils and repairs, and it will be found that it costs the United States Treasury about \$100.00 for every hour one of these planes is in the air.

It costs about \$20,000.00 to train one naval aviator. We have in the fleet today about 200 planes. The cost of aviation to the Navy is roughly about \$30,000,000. That is, including the pay of officers, care, upkeep of ships, and every thing connected with it. As planes in the fleet may be con-

sidered the final output of our aeronautical organization and expenditure, each plane in the fleet costs the Government about \$150,000.00 per year.

These examples may have a bearing on the statement that "\$400,000,000.00 has been spent on aviation in five years and there is nothing to show for it."

After three years' intimate association with naval aviation, I do not feel that it is handicapped by any condition that cannot be rectified or provided for by the Navy Department under existing law, or by a certain amount of legislation.

Without further discussion the following policy with regard to naval aviation, which will apply to other branches of the service, is suggested:

(a) Development and experimental work should be given predominance.

(b) Complete plans on hand and up-to-date at all times of planes to be built, and plans for aviation at the outbreak of war.

(c) Ships and carriers in commission to have full complement of aviation personnel and equipment.

(d) The amount of personnel and material will be based on the plan of their being the framework of the organizations to be built up at the outbreak of the war.

(e) The bulk of the personnel and material to be required after the outbreak of war.

We must have the best and most up-to-date planes, a highly trained personnel nucleus, and plans for expansion when war comes. The bulk of the personnel and material must be provided after war is declared.

I believe that the committee will find upon investigation that in the number of planes on battleships and cruisers, their use in reconnaissance, for spotting gunfire in fleet maneuvers, the United States leads the world.

The Chairman: Is there not a lack of security while aviation remains without a separate corps—or to use the term that is used in the Army, without a separate arm of the service—is there not a lack of security for the man that goes into aviation?

Captain Yarnell: There is no lack of security so far as any naval officer is concerned, Mr. Morrow.

The Chairman: But if he specializes enough he will disqualify himself. Captain Yarnell: It has been suggested that a certain number be assigned for aviation duty.

The Chairman: And they would be disqualified?

Captain Yarnell: They would be disqualified for high commands. But we have engineering officers and they will never be in command of ships.

Mr. Coffin: Captain, does it not seem entirely within the possibilities to you for a man to have aviation as a specialty and still maintain his progress in the line?

Captain Yarnell: Yes, sir.

Mr. Coffin: Is it not the practice that a man shall have had two years with the fleet after he becomes a flyer?

Captain Yarnell: I think that is an excellent thing, an excellent practice, because when a man leaves the Academy he does not know anything about the fleet, and the best way to get that knowledge is to go with the fleet, where they have the highest discipline, and where they keep up the target practice, and where he will learn the many things he will need.

Judge Denison: Captain, do you think, in view of its present accomplishment, and in view of what may be reasonably expected, that aviation should stand on a par with other specialties in the Navy; or is it entitled to any special stand and special treatment?

Captain Yarnell: I cannot see that it is so important now, or will be in the future, to warrant any special treatment over the battleships, or the fleet, or destroyers, or anything else.

Major General Harbord: Do you think this is a practical thing for a man in the Navy to spend his entire career as an officer in the Aviation Corps, or Aviation Service, and reap the rewards that would go with that lifelong devotion, and at the same time should receive the rewards that go with a career spent on the seaman side of the Navy as a Navy officer?

Captain Yarnell: I do not, General. There is a specialty that has not been mentioned who handle fleets and armies, we have not heard them here, and that is the high command, the people who handle fleets and armies, we have not heard them here. And that requires a great deal of speculation. There isn't any greater specialty required than to coordinate the amount of equipment in a great fleet.

Major General Harbord: And is it not true that the thought of the men is that they must go to the top without being commanded by nonflying men, but they, themselves, are willing to command nonfliers?

Captain Yarnell: I think that is true. I do not think they anticipate having on the ships aviators. But for the officers in aeronautics I do not see quite what their idea is. I do not see quite what their positions are. A tender that is in my squadron today is commanded by a young flier, and he is commanding it just as well as anybody, because he has had a great deal of experience. And the piloting and the discipline, and the keeping of it clean, he is commanding it well. He has nothing to do with the aviators, except to see that they are berthed and fed and helped along, and he can do that perfectly as well as any aviator.

Senator Bingham: When you took command of Hampton Roads in 1922, what knowledge of aviation did you have?

Captain Yarnell: None.

Senator Bingham: Do you not think it is reasonable on the part of aviators to feel that the placing of nonaviation officers in commands of important air stations like Hampton Roads, who have had no other experience, that that is a reasonable objection?

Captain Yarnell: I think those commands belong to the aviators when they get sufficient rank to command them.

The Chairman: Before we recess I would like to make a short statement.

At the outset of this inquiry, the Board stated that it felt that the proper place to begin was with the responsible officials of the War Department, the Navy Department and the Post Office Department. It is upon those departments mainly that Congress and the President have placed the responsibility for the organization and the functioning of the air services of the nation. We, accordingly, heard those departments through their heads or by such officers and officials as they might designate. We then heard from the National Advisory Committee on Aeronautics, a research organization which reports directly to the President. We also heard from the Secretary of Commerce, his suggestions as to possible aids to aviation through the Department of Commerce.

The Board spent three full days in hearing the departments. We then announced that we desired to give a full week to hearing the actual flying men. In order that there might be no misconception on the part of the flying men that the departments and the Board both desired that the personal opinions of the flying men should be given, we read into the record

letters of the Acting Secretary of War and the Secretary of the Navy, making it quite clear that personal views were sought. The Board selected the particular flying men and both the Army and Navy Departments co-operated most heartily in securing the presence of the officers desired.

We have now spent almost seven days in hearing the flying men. The Board is appreciative of the great frankness of all of these officers in giving freely and fully their own point of view. We feel—and we think those who have attended the hearings will concur—that we have received a wide range of Army and Navy opinion from the point of view of those whose lives and professional careers are vitally affected by departmental rules and practices.

During the hearings of the past two weeks, many questions have been raised, questions of personnel, of fundamental Army and Navy policy, of industrial cooperation, etc. The Board now proposes to call representatives of the Army and Navy, representatives of industry, and technical experts on these various questions.

The Board is advised that the Treasury Department in its Coast Guard Service and the Department of Agriculture in its forestry work and crop dusting make some use of airplanes. The Department of Agriculture is also in charge of the Weather Bureau, whose work is of importance to aviation. In order to save time, the Board has asked the Secretary of the Treasury and the Secretary of Agriculture to prepare for the record short statements. When those statements have been received, they will be inserted in the record and given to the press.

There are still some actual flying men that we may be able to hear, or perhaps get them to file statements. Any such statements will be given to the press at the time of their filing with the Board.

STATEMENT OF COMDR. JOHN S. McCAIN, U.S.N., AT PRESENT ON THE LEGISLATIVE DESK IN THE PERSONNEL OFFICE OF THE BUREAU OF NAVIGATION

Commander McCain: I wish to give an indication of how the present personnel law under which the line of the Navy operates or will function in the future. Promotion in the line of the Navy under existing law is by seniority from the junior rank, that of ensign, to and including the rank of lieutenant commander.

From lieutenant commander up through each succeeding grade promotion is made by selection. Lieutenant commanders who are not promoted at the age of 45 are placed upon the retired list; commanders not promoted at the age of 50 are placed upon the retired list, and captains not promoted at the age of 56 are placed upon the retired list.

Thus promotion conditions in the line of the Navy are highly competitive, and there is a feeling of unrest from the senior captain on the list down to and including the junior ensign. This condition is felt among aviators as well as the general service.

It is therefore not surprising that those who can lay claim to a specialty should be seeking the promotion protection of a corps, and it is to be expected that claims from other specialties to the same effect in addition to those now presented by aviators will be brought forward in the future. Aviators feel that these general conditions are aggravated in their cases by some conditions peculiar to aviation.

Further, the present law discriminates against age as measured by date of birth. Most of those on aviation duty in the higher ranks, by chance, of course, appear to be old for their classes. Thus an apprehension relative to promotion is a condition entirely to be expected among aviators, as it does exist in the general service.

There is further among the aviation pilots something over 100 officers who were secured from reserve sources immediately after the war. Practically all of these officers are university and college graduates, but they do lack the essential military education that is given to Naval Academy men. They have been employed constantly on aviation, without doubt improving all their opportunities to learn general duties while on board ship, but still they have the fear that they will suffer in competition with the Naval Academy people, which fear is also entirely understood.

Now, as to the very juniors among aviators, the youngsters: If the promotion plans which have been put before this committee mean nothing to those youngsters at all, but that they have extraordinary elimination from the aviation branch and after being eliminated from that branch they still further face the chance of elimination from the general service, their probabilities are principally in rotation to duty, how long they will hold onto their flight pay, and those things they do not know, but they would like to have definite information on. Naturally, a man wants to know how much money he is going to get, when he is going to lose, and what he is getting.

So I think these seem to be the principal causes of dissatisfaction among the aviation branch.

The corps that exist in the Navy are a protective promotion device pure and simple; that is, a promotion of officers assigned to a corps is assured upon the basis of their knowledge of specialty alone, and their rank and promotion is assured to them by reason of this knowledge independently of general operating subjects. To take a specialty and to assign thereto a body of officers with nothing else to do builds up a detrimental wall or barrier which affects both the specialty and the general service. Officers assigned to a specialty know that their future is dependent upon their knowledge of that specialty and performance of duty in that specialty alone, and that no other demands will be made upon them. The natural tendency is to lose interest in the general work of the service and to leave matters of a general nature to officers of the line.

On the other hand, if a specialty such as aviation is served by a specially created corps, the general run of line officers will dismiss that specialty from their minds and their tendency will be to make no attempt to learn aviation. In other words, that which becomes a specialty in the Navy is perhaps artificially placed beyond the general professional purview of naval officers, even though it is in fact an essential part of the profession. If the subject thus placed in the specialty is of any great importance in actual combat there is a very real danger of placing it under the special charge of a corps, because the tendency of line officers will be to let this specialty alone, when in fact their attention and study should be devoted to it in proper proportion to its importance in naval warfare. That is, it may conceivably so occur that the ability and resource inherent in a body of line officers in the Navy may become absolutely indispensable to aviation in the future.

In the very nature of things in the Navy only nonmilitary specialists should be assigned to a corps. On board ship people live closely crowded together. Operations must be dovetailed, harmonized, synchronized. It must be done by the same body of men, and a specialty on board ship should

be outside the general duties on board. Aviation is the integral part of life on board ship. Corps spirit, that is the impulse to improve the conditions of its own body, which is a natural and normal impulse, is necessarily at times synonymous with disloyalty to the general service, because such improvement or betterment of conditions, whether in rank or in scope of authority, can only be made relatively and always at the expense of other parts of the service.

Aviation is still in process of development. The limits of its development are difficult to estimate with any degree of accuracy. The number of aviators given in the report of the board in the Bureau of Aeronautics may, when aviation finally attains its level as a component part of the Navy, be much too large or much too small. Aviation should be left free to develop and to seek its balance as a component part of warfare at sea. Artificial stimulus as well as rigid repression will unfavorably affect its development.

In all of the schemes proposed before this committee the aviators demand in one form or another a command corps. This is a sort of a surety to specialty promotion, and at the same time the privilege and authority of command. There is no more deadly or destructive agency or device than to introduce a separate command corps in the service.

The oft-stated principle that an airplane must be commanded by aviation has an exact parallel in the axiom that vessels must be commanded by naval officers, by seamen.

The Whiting plan provides for the desired higher rank in aviation by detail and training of high-ranking officers of the line. This proposition is sound. He also recommends that the 1,225 junior officers whom he considers necessary in those ranks should be drawn from the service while young and returned to the service when comparatively aged. This also is fundamentally sound, because he uses the general service as a reservoir of youth, and he returns to the general service those who will be no longer needed in aviation or who have outlived their chance in aviation. It is economy to the main corps, but it is only economy if the officer who is originally detailed to aviation is also instructed in the general duties of the line so that on return to those duties he is capable of being of some use.

Navigation presented a plan for rotation of duty to accomplish the necessary teaching that the aviator has to have in general line duties. Other changes from the present system recommended by Commander Whiting is a temporary increase in rank. He promotes lieutenant commanders after ten years of service, to the rank of commander; commanders after seventeen years of service to the rank of captain, and captains after twenty-five years of service, to the rank of rear admiral, and rear admirals after 32 years of service.

You might as well have a separate corps if you go to a separate list. The effect is identical.

In regard to the old aviators who feel that they have been in aviation so long that their promotion will be militated against, I think that they should be relieved from the general competitive feature of promotion by a special law which would permit the selection board to recommend these officers for promotion and would allow these officers on promotion to become extra numbers.

In regard to the aviators who came in from the reserve source, those officers should have an amelioration, and examination for conditions for promotion. That is, they should only be examined on aviation subjects and perhaps some general subjects such as navigation and in ship handling. To expect them to take the general examinations on ordnance or in engineering I think is unfair.

In regard to the youngest officers who are now going into the corps it is essential that a proper and definite rotation of duty be developed so that they know when they are going to lose their flight pay, when they are going to gain it again, and I really think that they ought to be given flight pay all the time they are learning the line duties.

I think if those things are done that as far as the personnel problem is concerned—and material generally straightens out after personnel is fixed—there should not be any trouble. Officers in the Navy desire a fair deal in promotion. That is all as a rule that they generally do desire. If they see a chance to grab more they will grab it, see, but ordinarily they are satisfied if they have a fair deal.

The argument that Commander Whiting puts up that this thing would work and they should be given the rank, is valid in a sense, but it is not valid in connection with the entire service, because it will draw surely an ambiguous distinction between those officers and the officers of the general service, and it is only a matter of a few years—it might increase pay. There is no objection to increasing their pay, but to increase their rank has a very detrimental effect throughout the service.

The separate promotion list will introduce unlimited discord, and it will hamper seriously the development both of aviation and the Navy in relation to aviation.

The Chairman: I think Commander Bellinger testified that during the last 11 years he has been exclusively in aviation work, although part of the time, of course, he was on battleships in aviation work; he also testified that certain high officers in the Navy had counselled with him and told him that perhaps his continuance in aviation would interfere with his opportunity for further advancement in the line. Do you think that a man who has stayed that long in aviation would be injured in that way?

Commander McCain: I think his fear is quite natural. As I said before, in going before a selection board he should be relieved from competition, and the selection board should be required to pass upon its fitness for promotion to the line, and not upon his comparative efficiency in relation to a line officer.

Rear Admiral Fletcher: You would make provision that aviators would not be discriminated against in promotion on account of having performed aviation duty?

Commander McCain: I certainly would, yes. I think it is only due them. They were kept in aviation—of course, with their own consent, mostly—but nevertheless it was necessary for the efficiency of the service and of aviation to keep them there. The department did it and they should now be relieved of the onus which they think is upon them, whether they think it rightly or wrongly. It may not be on them, because in a few years from now training in aviation may be essential for promotion.

The Secretary of the Navy shall issue certificate that all officers who have been on aviation duty to such an extent that their general efficiency in the line may be considered to have been injured, that the selection board shall consider those officers' records when they present their certificates, solely upon their fitness for promotion alone, without regarding competitive conditions. In that way the promotion will not need to interfere with the chances of other people. They have their condition ameliorated and upon promotion they become immediately an extra number.

The Chairman: Is that a part of the "in and out" plan?
 Commander McCain: No; this is my own idea.
 The Chairman: If you do not mind, we will call yours the McCain plan.
 Commander McCain: Very well, sir.
 Senator Bingham: Did these officers that will be made extra numbers be eligible to command ships?
 Commander McCain: I should think that that could be very well written in the law. If they are qualified they should be eligible for anything.

**STATEMENT OF REAR ADM. WILLIAM R. SHOEMAKER, U.S.N.,
 CHIEF OF THE BUREAU OF NAVIGATION**

Rear Admiral Shoemaker: I would like first to make a short statement of the general relation of this Bureau of Navigation to the Bureau of Aeronautics. There is a very close relation, which is directed by the law, and by naval regulations. The connection which the Bureau of Navigation has with the Bureau of Aeronautics in the control of personnel of that Bureau is indicated in the duties of the Bureau of Navigation as defined in the United States Naval Regulations, Section 1, paragraph 443. These duties comprise, briefly, the issue, record, and enforcement of orders of the secretary to individual officers of the Navy and of the Naval Reserves; the training and education of line officers and of enlisted men, except of the Hospital Corps, at schools and on vessels maintained for that purpose; the upkeep and operation of the Naval Academy, the technical schools for line officers, the apprentice seamen establishments, the school for the technical education of enlisted men and of the naval home at Philadelphia; the upkeep and payment of operating expenses of the Naval War College; enlistment assignment to duty, and discharge of all enlisted personnel; it shall have under its direction the organization of the Naval Reserves, shall provide for the mobilization of all these Reserves. In the Naval Reserves there are also naval aviators, which comes immediately under the jurisdiction of my Bureau.

In addition to other minor duties, it establishes the complements of all ships, transports, all personnel on change of stations; makes recommendations to the Secretary as to Navy discipline, rewards and punishments involving the personnel of the Navy; it receives all reports of services performed by individual officers and men, and brings the attention of the Secretary to all applications from officers for leave, on duty.

Then in addition to that, the Bureau is charged with the maintenance, upkeep and general supervision of the Naval Observatory, the Naval Academy, the Naval Home, and so forth, and looks out also for the Hydrographic Office.

The duties of the Bureau of Navigation as outlined above as to personnel of the Navy are modified in these respects, in Navy Department General Order No. 65, paragraph 7, which has to do with the establishment of the Bureau of Aeronautics.

I might observe here, parenthetically, that no officer has been ordered to duty in the aeronautical organization of the Navy, or relieved from duty in that organization, during my incumbency as chief of Bureau, without the express approval of the Bureau of Aeronautics. The Bureau of Navigation is most desirous of assisting aviation in every possible way. The Bureau of Aeronautics desires the detail of more officers and men; and the only reason the Bureau of Navigation cannot detail them is that they are not available in sufficient numbers for the purpose, or with the money which Congress has appropriated for the personnel.

The number of officers and men detailed to meet the requirements of naval aviation is determined by the Secretary of the Navy, and the number so detailed depends upon the number available to do the work of the Navy, and this number in turn depends upon the appropriation made by Congress for naval personnel.

With regard to naval personnel particularly, in the appropriation act for 1922—that is, for the fiscal year 1923—the number of enlisted personnel was authorized at \$6,000, with certain details, such as Hospital Corps, and so forth, in excess. But the number actually in service subsequently has depended upon the sum appropriated each year for the pay of the Navy. We are now carrying less than 82,000 men. We were carrying at last account \$1,700 men. That is a total number that can be maintained with the appropriation for 1926, which is \$117,000,000. We have had to reduce, or we have had to interfere very materially with the advancement of petty officers in ratings in order to keep down the pay. We will have to come much below requirements to follow the operating plan of the Navy in the way of personnel. We have to run this year on less than 82,000 men, and, of course, every branch of the Service is correspondingly deficient in the number that it needs to perform its work. Certain numbers were set apart for aviation, and we have been extremely liberal with aviation. Up to the estimates for 1927 there have been no differences of opinion between the Chief of the Bureau of Aeronautics and myself. There is the closest cooperation between that Bureau and the Bureau of Navigation as to the detail of enlisted personnel. The details are all talked over and very carefully arranged. There has been no difference of opinion so far. But for 1927 they require more men than we can supply. Our original estimate was for 87,000 men. That, within the limitation of the budget, has been cut to 86,000. Perhaps I might state it in this way: The needs of aviation are based upon the amount of material which they will have for a certain year. The appropriations they estimate will give them so many additional planes and squadrons to put in operation for 1927. They call upon the Bureau of Navigation for the personnel to carry out that additional material. If we have not the personnel, of course, a certain number of those planes will have to remain idle. This same principle applies throughout the whole naval system. We have 350 or 360 destroyers, and we have to keep in reserve about 103 of those destroyers because we have not the personnel to man them. That, perhaps, is a good thing in peace time; and it also keeps down the total expense, which is a good thing.

In the same way a large number of submarines are out of commission because they have not the personnel or the money to man them. Aviation, unfortunately, has to operate under the same conditions.

It has been the practice up to the present time to detail officers who were approved or recommended by the Chief of the Bureau of Aeronautics to command these squadrons, and there have been six or eight who have held those positions. They are now available for aviation duty or for line duty, as the case may be. Also the large stations on shore, the aviation stations, have been commanded by experienced officers of the line, who have indicated by their experience, and by their capacity for command, which is indicated in their records, that they are fit persons to do that duty. But all of such details are made with the approval and upon the recommendation of the Chief of the Bureau of Aeronautics.

Since I have been chief of the Bureau I have considered it a good policy that in future all officers who are sent to command the aircraft squadrons of the two fleets or a large naval station ashore should at least qualify as naval observers.

A naval aviator goes in when he is 18 or 19, which is the best age, and he keeps on and is not used very much after he gets to the age of 35. In foreign navies they will let a naval aviator keep on to 45, and in exceptional cases 48 in the British Navy; but officers after 48 they do not put them through an aviation course but give them an observer's course.

The comparative youth and inexperience at the present time of the qualified naval aviators renders them unsuitable for the command of large stations on shore. There are only three naval aviators with the rank of captain. There are a number of commanders, and so on. Just as soon as officers have gotten the necessary rank and the necessary experience, and have convinced the Secretary of the Navy that they are the proper people to put in command of big air stations on shore, they will certainly be so detailed, and there is no question about that. The Bureau is now endeavoring to qualify as naval observers a sufficient number of senior officers properly to administer these stations, and for the two chief commands afloat; and it is believed that within a reasonably short time it will have accomplished this object. As naval aviators gain in rank and experience they will be ordered to command these stations.

Measures have been proposed by the Bureau to provide the necessary operating personnel and arrange for the detail to aviation and line duties of officers in order that aviators may be equipped to fulfill their functions as aviators and at the same time be qualified for line duties, including the command of airplane carriers and other surface craft.

We took the class that was to go to sea as first classmen, took 150 of them, as that was the number of materiel for their instruction that could be provided, and kept them out of the Naval Academy for three months, and gave every one of them eight hours flight in the air, with no accidents of any kind, and they had three months ground instruction. So they are fairly well started on their aviation career if they may choose that branch of the Service.

When the rest of that class comes back after graduation next June, they will then be ensigns, and they will then go through the three months course.

Further, a recommendation made by the Bureau was that officers during two years at sea after graduation should, under the direction of the commander in chief—of the fleet I mean, or at Hampton Roads, or at Pensacola—be given additional flight instruction, so that they can qualify as naval observers or naval aviators. That they could, if they cared to, specialize and go into aviation as a definite and final thing. That was, of course, up to them, and they could go to Pensacola for additional instruction.

Now, previous to the appointment of the board, the Bureau of Navigation had taken up the subject of a definite policy for the employment of aviators after graduation; how much time they were to put in on aviation, how much time they were to put in on other line duties. That paper is included in the papers which I believe have been transmitted to this board, and was included later in the report which was submitted in September. The board now has that.

This proposal divided the time definitely of a man's career, in aviation and his career in flight. It goes into great detail as to the fitting out of the carriers Saratoga and Lexington; it goes with great minuteness into exactly what happens to a man throughout his aviation career; it prescribes that he shall do general duties at sea as an ensign, and that then he should go into aviation for five years, and then should go back on line duty for two years; and that then 50 percent of that number should go back to aviation. All this gives him for specialization 15 years, and gives him about four years of line duty.

I would say that that is very little for line duty and is a very liberal concession to this special work. But I think if the men pay attention to the business aboard ship, and have the right details to fit them for future command, it will work out all right. I think they will get around with these details. And if any of them do get around and show ability to command ships they will be given command.

At the end of that recommendation that we submitted the 4th of May the Bureau recommended specifically for the Secretary's approval to build up the naval aviator group to a total of 750, and that that number should be maintained until some increase in tonnage as well as increase of officer pilots. By tonnage he means increase in number of airplanes and carriers, and so forth, which go to make up materiel. The policy of maintaining and actively employing in units of naval aviators, pilots to be procured from specially selected young men to be chief naval aviation pilots, aviation pilot first, second and third class, so that promotion will be confined to these men. And they are returned to ground duties when 35 years of age.

Now I should like to take up the question of the detail of officer and enlisted personnel to aviation. The Chief of the Bureau of Aeronautics, and I think a majority of the aviators, would prefer to see all aviators commissioned officers. That would make a small compact group.

Undoubtedly it would be a very desirable thing if it could be done. But it would be a very expensive thing, because of the additional pay that they receive, and it would require unquestionably that Congress increase the number of appointees to the Naval Academy from three, as at present authorized, to five. It cannot be done with a smaller number, and I will show you why.

There is a great elimination of men that go up for this aviation title by the doctors, and by reason of those who lack the temperamental qualities that make a naval aviator.

If you consider the available officer personnel; take the number at the Naval Academy that we just had examined by flight surgeons. There were 150 of them, and the medical examinations from 150 midshipmen was 66 percent.

Now remember that those youngsters had all passed an examination for four years and were qualified to go out in the Service. And yet the flight surgeons cut off or eliminated 95 out of 150, and certified 55 as being fit for naval aviation service. That is, I mean the flight surgeons said they had the proper physical qualifications.

Now in addition to that the flight test eliminations at Pensacola for the last six classes were 40.2. Remember, the eliminations at Pensacola are in addition to the eliminations made by the flight surgeons. This takes in the temperamental qualities. An aviator, in a way, is born and not made. He must have certain qualities that make of him a naval aviator. For instance, he goes aloft and is able under all conditions to coordinate and to handle himself properly, and to keep the plane in proper place, or to get it at the proper place at the proper time, and make proper landings, and so on.

When he goes down there he has an instructor who observes him, watches him carefully, and if after 10 hours flight he bungles the instructor will say that it would be unsafe to let him go farther, and he is eliminated. One case in point in that school down there was that of an aviator, or wished to be one, who had gone aloft, and when he came down to 1,400 feet the instructor saw that he would not make an aviator. So he said to him, "You are out." And he said to him, "You passed out 1,400 feet up. You did not know how you got here, did you?" He said, "No." That is the elimination process.

If you had three appointments at the Naval Academy, if it becomes stabilized at three appointments, considering all the losses of every kind, it means about 5,000 men. The number allowed by law, if you could get it up to that, is about 5,400. But with three appointees for each member you will never reach that. It will go to about 5,000.

Then attrition in the aviation branch from all causes, deaths and resignations and so on, are 7 percent to 8 percent.

The size of the Naval Academy class for line graduating at the three appointment basis is about 260. That is all you can get, considering the wastage for past years.

Supposing they were all to choose to become aviators you would eliminate a certain number. Giving 5,000 line officers the flight medical examination would eliminate two-thirds, or leave 1,700 for flight training.

Eliminating 40 percent by flight tests would leave 1,020. This number is a theoretical maximum total that could be made naval aviators using the entire line branch as a supply and detailing all eligibles. The board requirement is 1,500. That is what aviation would like to have, 1,500, and ought to have it.

The yearly attrition at 7 percent would be 71.

With a class of 260 graduates, if one-third were eliminated physically, would give only 87 for Pensacola. Eliminating 40 percent there, we have 52 as the yearly increment of increase as against an attrition of 71. The naval aviators would therefore stabilize at 747, instead of 1,500 aviators that are required.

The Bureau's number, 750, as a naval aviation total, is the possible producible total, and is in excess of the requirements for administration and leadership if enlisted pilots are utilized to man aircraft.

Unless measures are taken to increase the commissioned line strength of the Navy, with the present methods of administration, and even using the detail system on all available graduates, the naval aviators of the Navy will stabilize at a number somewhat less than 700.

I was looking for my figures, but I think I can depend upon my memory. We have 358 naval aviators now who are graduates of the Naval Academy, commissioned officers. We have 114 enlisted men who are aviation pilots. We have 350 naval aviators in the Reserves, and the Chief of the Bureau of Aeronautics tells me that some of the very best men they have are in the Reserves. That is, actual aviators and flyers. That is their record.

So we have about 800 that are available. Why, if we could have 750 enlisted men as pilots we would then have 1,500 or 1,600.

The war requirements of aviation are about 2,000 pilots. If we had 1,500 in that way we would come nearer to meeting our requirements than any other branch of the Navy could possibly do. It would be a very good thing if we could do it.

As to the arguments as to enlisted pilots, aviators say that they are not as safe; that the Naval Academy graduate is a better man. Well, of course, and due to his Academy training, mental training, and so forth, perhaps he does coordinate a little better. But I think the physical qualifications and temperamental ones that I have mentioned are independent of that.

Lieutenant Commander Spencer has just returned from Japan, where he was sent by the commander in chief on aviation duty. He reports that the Japanese are training two enlisted men as naval pilots to one as an officer.

I think we are perfectly safe, or I feel so as the chief of the Bureau, in advising strongly that the policy be adopted of having at least as many enlisted men as pilots as you have officer pilots.

In this connection I will say that the Army aviators that made the trip around the world, which was a very wonderful thing, were all of them soldiers, enlisted men promoted to officers, every one of them. They were not West Point men at all.

I am informed by a captain who just came back from command of a battleship in the Pacific Fleet that the best aviator in that fleet, before known as a machinist, was a man named Shedd. And there is a boy up at Newport, who is an instructor there, who is probably just as good. I do not think it makes very much difference. During the war thousands of men who came in as aviators were of that class. They did not come from the Naval Academy or from West Point.

I want to tell you that it is the only way out for the Bureau of Navigation, to do this thing, to have enlisted men, as many of them as there are officer pilots. We cannot fill it unless Congress gives us five appointees at the Naval Academy, and it might take six.

Senator Bingham: Do you believe that our young men are more like the French and the Japanese than they are like the British, and that therefore we should follow the French system and the Japanese system rather than the British system?

Rear Admiral Shoemaker: I think that the average of our enlisted flyers is very much higher in the Navy than either the French conscripts or the Japanese. I think so well of them that I would be perfectly willing if I were an aviator to trust myself with those who had qualified.

I have officially stated that I think there should be substituted for flight pay a requirement that they take out Government life insurance, in lots of \$10,000 or \$20,000 or \$30,000, according to the needs of their dependents. If the argument for flight pay is based on the risks run, then it should go to those dependent upon them. They cannot expect to be remunerated for the dangers they face. A post of honor is always based on danger, and I do not think it should be commercialized. That, I think, would be the preferable scheme.

I should like to call attention to this situation: As it is now the higher up a man gets in the hierarchy of the aviation service the less flying he does, and yet the more pay he gets for doing it. My sympathy is all with the youngsters who are doing the flying, and not so much with the man higher up. Therefore I would advocate one pay all the way up, everybody to get some of it, and I would distribute some of it down the line to those who are flying.

Senator Bingham: Who was it that suggested that flight pay be taken away from the naval aviators when attending the War College?

Rear Admiral Shoemaker: I did it, and because the law required it. The law requires that a man in the Navy who is ordered to duty, if he is to get flight pay, shall be ordered to a duty involving flying.

Senator Bingham: Can the Chief of the Aeronautical Bureau go to the head of the Department without passing through you?

Rear Admiral Shoemaker: Absolutely. Any of the heads of the bureaus are on a par about those matters. Anything he does not like he will go to the Secretary about it.

And in this connection I would like to say that in handling the personnel of the Navy every bureau chief makes his recommendations in regard to his personnel, the way he wants the officers moved, where he wants them, and why he wants them. He sends that recommendation to me, and 19 times out of 20 there is no question about it, they go where he wants them. My relations with all of them are most pleasant. I have never had any differences with any of them. Little questions of differences of opinion might come up.

Major General Harbord: Admiral, your plan of substituting some form of insurance for the flight pay would tend to put the family of the enlisted aviator on the same footing as an officer?

Rear Admiral Shoemaker: Yes; according to his scale of living, or what his dependents expect, you know, would not be as great. I would divide that Government insurance up into \$5,000, \$10,000, \$15,000 or \$20,000. I would provide certain grades to carry that insurance. I think it is perfectly logical, as our reason for giving him that increased pay. And I am for it. I believe in it. If they cannot give him the increased pay—but with this equalization I am talking about, and I do not think it is equitable to divide among the aviators. I would like the young men to be given a chance. I have had it from various sources. I doubt very much whether a separate corps would be agitated if all naval aviators could be assured their flight pay when separated from the corps and on general duty in the line.

The Chairman: Admiral, I want to make this clear: I understood when you spoke of the enlisted men you meant a man who, going into the Navy, has open to him, if he passes in his examinations, the opportunity to become an officer?

Rear Admiral Shoemaker: Yes; any enlisted man in the Navy—any man who goes in is given opportunity under the law to become an officer. He goes up through the chief petty grades, and then he becomes warrant officer; and after his warrant service, if he wants to take an examination for ensign it is open to him, and he goes to the Academy.

The Chairman: What is the age limit for taking the examination?

Rear Admiral Shoemaker: Thirty-five. Any man can go in there at the age of 35 and take the examination, and he can go just as high on the list governing age for retirement as it will let him.

Mr. Coffin: As a matter of fact, you cannot get the personnel up to the mark under the present organization of the Navy in peace time?

Rear Admiral Shoemaker: No, sir. It cannot be done unless the requirements for aviation are very materially changed.

Mr. Coffin: And that would not be a good thing, would it?

Rear Admiral Shoemaker: Well, I think it might be a good deal modified. I think the doctors, the flight surgeons, are just a little bit—they stress the point a good deal. In the list, for instance, they had men disqualified for aviator or observer on account of flat feet. Now, flat feet are very much more of a handicap to the officer who is going to stand watch on deck than they can be to an aviator. I called his attention to this, and he said, "Well, aviators"—called my attention to the fact that if they had flat feet they sometimes in working these pedals would get cramps, and therefore they put the flat feet down as one of the disqualifications. Well, that may apply to a man who actually manipulates the plane, but how about the observers? A man with flat feet can sit there, you know, and observe and send radio messages and bomb and do all those things, and feet do not enter into it at all.

Mr. Coffin: Who teaches air tactics at the Naval War College?

Rear Admiral Shoemaker: I have been trying very hard to get aviators to take the course at the War College, and Commander Bellinger was going this year on the staff of the War College for that purpose, but since then he has been invited by Admiral Hughes to go out as aviator in the fleet, and he has dropped that.

So that we have always wanted aviators on that staff if we can get them. We have always wanted several aviators to go there. The War College is the best aviation school in the world, I think, in the strategy and tactics of aviation, and every problem that is solved there now has aviation in it. They give it tremendous weight.

I have got two aviators up there now taking that course, and I would like next year to have four or five, provided they can be spared; but the trouble is that there are so few aviators, only 350. There is so much work for them to do out in the fleet. They have 450 planes actually afloat in the fleet today, and when they get the Lexington and the Saratoga, why each one of them will have 72 more, and that is a great demand upon aviation. They cannot keep up all these things and at the same time send these young men to school, either Pensacola or the War College.

Now, it has been mentioned that they ought to have an aviation school. I have not the slightest objection to it. I would like very much to establish one, and I think one for minor strategic work and one for all technical work could be established at Pensacola, but I have had no recommendation from the Chief of the Bureau of Aeronautics to do it, and I think that is because he has not had officers to act as instructors or to send there as students. That is the way it looks to me.

Parenthetically I may here state that while we may expect great things from the use of carriers, so far no airplane has yet flown from a carrier carrying a 2,000-pound bomb or a torpedo. It may be further stated that the 36 bombers from a carrier having dropped their bombs are done and out of action. There is no possibility of their returning to the carrier and getting a new supply.

Senator Bingham: It was testified to by Admiral Strauss that they were using the old type sights that they had in the war.

Rear Admiral Shoemaker: Well, probably they were. Probably we get better results now. I am only just explaining these experiments.

Now, we assume that they make 7 percent of hits in action, and the Bureau of Ordnance has gone far—and the Bureau of Construction—into the number of hits that a modern battleship would require to put her out of action, and we estimate it would be four, four hits. One hit might destroy a part of it, and another hit alongside of another, and so on. Four is considered to be about the number.

So that if you say 7 percent of hits are necessary it would require the dropping of 60 bombs from that height, which is 2,600 meters, as I remember, in order to put the ship out of action. Now, an airplane carrier can only carry a certain number of bombers, and it would take two airplane carriers to supply the number of ships necessary to destroy the battleship.

That is the great limitation on the airplane carrier; that it carries so

few bombs that can be used for that purpose; and when they go out and drop their bombs they are done. They are never going to get back to that carrier and get any more. She will be chased by destroyers and fast cruisers, and she will be bombed herself, and she is done as soon as she has dropped those bombs, one or two, or three or four, or whatever she has.

So that it looks like a very expensive arrangement. I think we are going to do very much better than it appears at the present now. As this gentleman has stated, why they have better bombing sights now than they had at that time, and they probably would make more hits.

Now, while I am on that subject I might as well say something about the commander of aircraft carriers. There is no question that the Chief of the Bureau of Navigation then would recommend to the Secretary the element of the command of an aircraft carrier by a man who had had large aviation experience, a naval aviator if possible. If it were a naval aviator whose experience in the command of ships and whose capacity of command had been determined by his previous record, and he had commanded several smaller vessels and done it successfully, why he would be exactly in line to command the aircraft carrier, and he should have the command.

There are six or seven officers, captains, who now have commanded either the aircraft squadrons with the Scouting Fleet or the aircraft of the Battle Fleet who are eligible to command those ships.

Senator Bingham: Is it not true that airplane pilots feel exactly the same way towards nonflying officers as you feel towards the nonseagoing officer?

Rear Admiral Shoemaker: I have not any feeling against a nonseagoing officer. I will take a flyer, he may have all the proficiency in the world in the air, and if he will go aboard the ships and demonstrate his ability to handle them I will treat him exactly the same as I would treat a man who had never been in a plane. In fact, if it was an airplane carrier I would give him preference, because he would know better the conditions under which airplanes must operate than a man who had never been associated with them.

WEDNESDAY, OCTOBER 7, 1925

STATEMENT OF ADMIRAL W. A. MOFFETT, CHIEF OF BUREAU OF AERONAUTICS, U. S. NAVY.

Admiral Moffett stated he had served a little over 39 years in the Service, have been connected with aviation since 1917, commanded the Mississippi, the second battleship in the Navy to have planes aboard, flown over 500 hours, and qualified as observer, and decorated with medal of honor.

Rear Admiral Moffett: It has been testified that the Navy is operating 14 air stations in violation of law. It is hoped that the witness was merely ignorant of the facts in the case.

I would like to say a few words in connection with the McMillan Arctic Expedition. The planes provided that unit were the best planes that could be had in time to accompany the expedition. That they were good planes is evidenced by their record of 75.84 flying hours or a distance of about 6,000 miles without a single casualty and only one forced landing. The flying was done under most trying conditions, freezing weather and over uncharted mountains and waters, including the Greenland ice cap. There has been, I fear, a rather general misconception of the purpose of that expedition. It was not the idea to fly to the pole but to explore unknown country and as far as time and weather permitted this was done, and approximately 30,000 square miles of territory were observed. I personally feel that both the personnel and material of the expedition are due the highest praise for work well done.

Were I again to make a selection of personnel and material under the same conditions I would not make a single change.

Before and after each flight of any naval airplane not attached to an organized operating squadron a report of inspection is required. Before any plane can take the air it is completely inspected and a report made that it is in satisfactory condition for flight. Should the pilot who is to fly the plane not agree with the report of the inspector he is required to report the circumstances to his commanding officer.

In the case of an organized operating squadron the same form is used but more latitude as to the frequency of inspection is allowed the squadron commander, who is in all cases a qualified naval aviator of experience.

Types of parachutes developed by the Army but improved by the Navy have been developed for heavier-than-air craft. All units have been supplied as rapidly as obtainable in accordance with a priority list. Approximately 1,000 are now in service and this number is sufficient to equip each unit satisfactorily.

It is only within the past two years that, coincident with the development of a satisfactory parachute and with several spectacular escapes by prominent pilots through the use of parachutes, that they have met with favor.

Even now there are pilots who prefer not to wear them. For an over-water flight some pilots contend parachutes are a menace rather than a help. In our larger twin engine seaplanes the engine personnel assert they cannot well attend to their duties if they are encumbered by parachutes. For such reasons there had to be some latitude given commanding officers in regard to the use of the parachutes, but the general practice is to insist that each man carry a parachute and wear it when in the air.

The psychological effect of parachutes on passengers and even on crews of airships is bad. For airships operating over water their utility is questionable. It has not been common practice in Germany, England or America to carry parachutes on rigid airships and the consensus of considered opinion is that they are unnecessary.

On her first flight the Shenandoah carried a parachute for each person and an elaborate parachute station drill was executed. It consumed valuable time, disturbed the operation of the ship, and was abandoned.

On the request of the commanding officer two training parachute outfits were assigned to the Shenandoah so as to be available in case it was desired to land a man for any special purpose. These were on board during her last flight.

In regard to the Hawaiian flight I would like to say a few words. On May 1 and 2 at Philadelphia the PN9 No. 1 which was the plane Commander Rodgers commanded on the Hawaiian flight, remained in the air 28 hours and 35 minutes. On the Hawaiian flight the PN9 No. 1 carried 22 gallons more gasoline than on its test flight at Philadelphia. Based on its record at Philadelphia there was every reason to believe that the plane could make the flight from San Francisco to Hawaii and have remaining

a two hours' supply of gasoline. True this was not a wide margin but the naval aviators of the United States Navy have not yet, I am glad to say, reached that point where they are willing to undertake only the "sure thing." I sincerely hope that day will never arrive for when it does progress in naval aviation will cease. We did not succeed the first time but we will succeed before we are through.

It appears to me from such information as has come to my knowledge regarding the Shenandoah and from my general observations of the last five years covering aeronautics, that steps should be taken to expand and broaden the meteorological service for broadcasting aviation weather which now exists. The quality of information got through our present system is excellent but we should have more of it and the work of charting and predicting upper air weather and conditions ought to be extended and emphasized.

Under a Joint Board mandate, dating from 1919 the development and procurement of rigid airships was assigned to the Navy Department and since this date the Navy Department's airship work has been concentrated on the rigid, or large, airship. The Navy Department is particularly interested in the development of an airship having a full speed radius of action of more than three thousand miles, and I think this work ought to continue. There has been built up at Lakehurst an organization which has done much towards showing the advantageous properties of large airships and is capable of going a great deal farther. The art of rigid airship building is today at the same relative point as was the airplane art in 1915. Rigid airships cannot hope to be benefited by such an extensive development involving very large expenditures, mounting into billions of dollars, as airplanes received during 1916-1919. The best that airships can expect is a steady, farsighted, progressive development. This is the sort of development the Navy Department is pledged to give, both in the interest of the military and the commercial sides of rigid airships.

Without the intention or desire to apologize for the performance of the Shenandoah it should be pointed out that the Shenandoah in general followed a 1915 design. In spite of steps toward modernization, she remained too small and had too poor performance to accomplish all an airship can and should do. She was designed to use hydrogen gas and helium handicapped her operations about 40 percent. She was regarded, and properly so, as an experimental and development airship and a forerunner of others of larger size.

Even so, during her two years of active life she equaled or bettered, in number of cruising hours and distance flown, the record of any airship of her type. She was the first helium-filled rigid airship and the first airship to moor to the U.S.S. Patoka, the first floating mooring mast airship base. The successful outcome of the Shenandoah's battle in a damaged condition with a seventy-mile gale is proof that the type of craft is not inherently weak and that it must have been indeed an unusual storm which finally caused the Shenandoah to succumb. The Shenandoah's exercises with vessels of the Fleet during the last Summer showed that the large airship is capable of exerting a powerful influence on naval warfare. The Los Angeles is foreign built and was restricted to a size smaller than we asked for. The terms under which she was obtained provided that she be used for civil purposes. So far as the Los Angeles goes, she is an excellent example of modern airship construction, but again, she is too small for attaining and showing the advantageous properties of airships under United States operating conditions.

I would like to see authority given to establish a suitable airship base on the West Coast, where considerations of strategy and weather indicate the next airship base should be established. And I would like to see a continuous program for airship construction planned and started with the construction of at least one airship which may be considered as a replacement for the Shenandoah, but to have performance superior to that of the Shenandoah.

In the hearing before this Committee there has been injected the matter of law governing the operation of aircraft from shore bases.

The Fleet includes patrol and district and convoy vessels.

While presumably this should be satisfactory it appears that in some quarters it has been, and in future is likely to be, invoked to restrict and hamper the development of naval aviation, and I am in favor of the repeal of the act of 1922. I am in entire agreement with the principle of keeping the number of naval shore aviation stations to a minimum consistent with a development of naval aviation to fulfill its proper functions. It has been the endeavor of the Bureau of Aeronautics to spend appropriations on sea-going aviation. I think it must be apparent, however, that aircraft, like vessels, require a certain number of stations where they may refit, and from which offensive coastal operations may be carried out.

I recommend repeal of the existing legislation quoted above in order to make conflict of ideas and ambiguity impossible, and to this recommendation I would add another, namely that the functions of the Army and Navy including Army Air Service and Naval Aviation be determined in the future by the Joint Board as is now provided.

Our whole program of aircraft types, functions, etc., is based on the present rules approved by the Secretary of War and Secretary of the Navy and this procedure should govern in future.

We have all heard statements to the effect that our coast can be bombed by aircraft from foreign shores. In order for aircraft to operate against our coasts from foreign-owned islands, such as Bermuda, Jamaica, Canada and other nearby foreign possessions, bases must be established and aircraft provided. To do this the materials for bases and the aircraft must be brought from foreign shores in ships. If the number of subsurface, surface and aircraft in the United States is maintained in accordance with the 5-5-3 ratio, the bases will never be established and the aircraft will never reach our coast. The greatest assurance against such an attack is a Navy second to none, under the sea, on the sea and over the sea.

I mentioned before the building program approved by the Secretary of the Navy. This program provides for building up aviation in the Navy so that in five years naval aviation would have all the aircraft necessary to man the organization as laid down today. That program is the revision of a previous five-year program recommended by the Bureau of Aeronautics. Since making it out last year there have been a few changes which will be submitted to the Department. The principal change is due to the fact that we find that with aviation on board ship being increased, we need a greater reserve of engines than we had anticipated.

Our air stations are, with the exception of San Diego and Pearl Harbor, generally inadequate in facilities and of war-time temporary construction. There is a plan which the Department has worked out in con-

junction with the Bureau of Aeronautics which contemplates the building up and modernizing these stations over a period of twenty years. This program, like the building program, is several years behind.

For the past four years the Naval Bureau of Aeronautics has been concentrating on the problem of developing aviation with the fleet. This not only includes the development and equipment of aircraft carriers, but also the supplying of aircraft for every type of floating craft, from the battleship to the submarine.

For the battleships and carriers and other vessels it was found necessary to develop the airplane catapult, which went through a series of developments until now the powder type catapult is very successful, and requires very little additional apparatus and no additional training. For catapult use we have developed a special type of airplane, which is necessarily limited in weight by the characteristics of the catapult and in dimensions by the limitation of deck space. Of this type, known as the UO, the Navy has purchased during the last few years 270, and of these 50 have not yet been delivered.

For general use in the Navy, on board carriers and on tenders, it was desired to develop a three-purpose type, to cut down the number of different types and to simplify operation by the personnel. This type was originally developed as the DT, in 1923, and its first use was in torpedo dropping. Of this type 75 were purchased. I should interject here to say that a three-purpose plane means, torpedo, bombing and scouting. Following this design, and making use of the knowledge and experience gained in the operation of this airplane, the CS was developed as a three-purpose, bombing, scouting, and torpedo-dropping airplane, of which five were purchased. The CS type was followed by the SC, which was a further development and refinement of the type of airplane especially suited for bombing, scouting, and torpedo dropping, and of this latest type 75 were ordered. I feel that this development has been carried to the point where we are now justified in equipping our aircraft carriers with this splendid airplane, and orders will be placed during the coming year for 43 observation planes, 81 fighting planes, 126 three-purpose planes, and 40 training planes.

The pursuit type airplanes for use on aircraft carriers will be the same type as are used by the Army Air Service. The performance of this airplane is not equalled by that of any similar type in any country in the world.

The airplanes on order at the present time are as follows:

- 22 Boeing training planes;
- 40 SC or three-purpose planes;
- 3 Loening amphibian planes;
- 14 Boeing fighters;
- 7 Curtiss fighters;
- 3 Curtiss racers;
- 50 UO or Vought observation planes;
- 3 Boeing bombers (experimental);
- 3 Douglas bombers (experimental);
- 1 Bomber at Naval Aircraft Factory;
- 2 PN-10 or long-distance patrol planes.

During the period of experimental development, both the Bureau of the Budget and Congress have given adequate appropriations to the Bureau of Aeronautics, having in mind the present necessity for economy, but appropriations for the purchase of aircraft must necessarily increase with the continued development and increase of aviation and the need for equipping the battle fleet with aircraft carriers. Aviation is constantly growing and will continue to do so.

I feel confident that the Bureau of Aeronautics now has airplanes of the various types required for operation with the Navy developed to the point where their performance is equal or superior to that of similar types used by other nations. I would further like to emphasize that the United States Navy is the only navy that at the present time operates airplanes from battleships and cruisers by the use of the catapult. This operation has been so successful and so dependable that I doubt long-range target practice will in the future be attempted without the use of aircraft for spotting the fall of shot.

In regard to the Navy Department Budget, I believe that the Navy must be not only the treaty Navy, but have its full quota of aviation. Aviation will settle the next naval war because the fleet without its full quota of aviation, and the best aviation, will be defeated. I therefore say aviation is of transcendent importance to a navy—to our Navy. An army may get along without it—witness the Riffs—but a fleet, never.

I claim that aviation is a gun, a bomb, a torpedo, a mine, a spotter, and a scout, all in one; fragile, it is true, comparatively, and at present limited in its operation, but with infinite possibilities. I claim that as long as our fleet is not evenly balanced as to its aviation, both in material and personnel, it is as if the fleet were short of guns, torpedoes, mines and men, and that until this shortage is made up more money should be allotted to aviation and less to surface ships—if money for both cannot be obtained—I am for ships and subsurface, but the ships without their aviation will be crippled, or lost, and our fleet defeated and the war lost.

The Chairman: May I ask you a question at this point, Admiral?

Rear Admiral Moffett: Yes, sir.

The Chairman: You have just spoken about our superiority in catapults?

Rear Admiral Moffett: It was found that in modernizing these ships, when actual modernization was undertaken, that the money that had been asked for and appropriated was not sufficient to install catapults on battleships of the scouting fleet, and I believe it is the intention of the Navy Department to ask for that money.

Rear Admiral Moffett: To sum up the recommendations made, and which I specifically submit to the Board for the betterment of aircraft in the defense of the country, I desire to submit the following:

- (1) Repeal is recommended of the legislation contained in Army Appropriation Bill for 1922, which imperfectly defines the functions of Army and Navy air forces. The divisions of functions to be determined by the Joint Board is now provided. If new legislation is needed, it should be on recommendation of the Joint Board.
- (2) Remove limitation on number of naval shore stations devoted to heavier-than-air activities, since new stations cannot be established without Congressional authority.
- (3) Legislation should be enacted which will permit duty involving flying at an active Naval Air Station to count as sea duty for promotion purposes.
- (4) Establish a Bureau of Civil Aeronautics along lines of Winslow Bill in the Department of Commerce.
- (5) That the number of Midshipmen be not reduced and the present

allowance of five be appropriated for, as the Naval Academy is the best source of aviation pilot material.

(6) That the appropriation for the enlisted strength of the Navy be increased so that enlisted personnel for aviation will be in addition to that for the rest of the Navy.

(7) Authority should be given to establish an airship base on the West Coast.

(8) The U.S.S. Shenandoah should be replaced as soon as practicable by a modern rigid airship, constructed in the United States, of at least 6,000,000 cubic feet capacity.

(9) The five-year program for airplane and airship construction to be definitely established and assurance given that it will be carried out, and the necessary additional personnel provided for.

(10) The remaining treaty airplane carrier tonnage be completed in private shipyards, not only because of national defense and to complete the treaty Navy, but to assist the dying shipbuilding industry.

(11) The program of the Navy Department's Navy Yard Development Board with reference to aviation projects to be put into effect and the necessary funds provided, especially for the air stations at Coco Solo and Pearl Harbor.

(12) The course in Aeronautics and practical instruction in Aviation at the Naval Academy to be extended and appropriations made for necessary training facilities at Annapolis.

(13) That more appropriations be made towards building up an adequate and efficient Naval Aviation Reserve.

(14) The flight pay question to be settled, if possible, by recommendation of this Board.

(15) Give the Secretary of the Navy more latitude in making aircraft contracts, by negotiations, restricted list of bidders, and proprietary rights.

(16) That the National Advisory Committee for Aeronautics be continued as an independent Government establishment for the conduct of fundamental research in aeronautics.

(17) Adequate legislation be provided to protect the interests of these Naval Aviators who entered the service during the World War.

The Chairman: What recommendation would you have this Board make regarding flight pay?

Rear Admiral Moffett: I would recommend that the pay question, the flight pay question, be left as it is until flying is less hazardous, that is as far as aviators are concerned. I think bringing up the question all the time or the fact that they know it is under discussion and may be changed has a very disturbing effect on the personnel.

The Chairman: Admiral Shoemaker recommended that instead of increasing the pay and insurance schemes be provided, and he further recommended that extra flying pay be based on a percentage of base pay, that the higher officers got too much, and the junior officers got too little.

Rear Admiral Moffett: The younger men do more flying now, but as they grow older and their duties become more administrative, they will fly less. I see no reason for decreasing their pay as they grow older and get more experienced.

I would like to say further that the Congress, in passing the pay law recognized an established principle that the pay would be based partly on the number of dependents that a man had. That principle was established by Congress in the last pay bill. I think that men that are flying regularly are entitled to ever cent of flying pay that they get, and that this agitation ought to be stopped in some way. Referring to the general subject of pay, I think everybody in the Navy, all of the officers personnel is underpaid, and one of the causes of unrest is that they are not only underpaid, but most people in the Navy are more or less in debt. I think if the base pay of the Navy was raised to the flight pay everyone would be satisfied and there would not be so much trouble about it.

I think the accidents, or a great many of them at least, have come among people who have been out of aviation and then come back to take an additional course.

Senator Bingham: You would agree with General Patrick's statement to us that no man who is a flier can be out of the service for any length of time without injury to his ability as a flier?

Senator Bingham: What do you think of Commander Rodgers' suggestion that this question of deadlock between the Army and the Navy, joint boards and joint maneuvers, could best be settled by a department of national defense representing both the Army and the Navy?

Rear Admiral Moffett: I do not agree with Commander Rodgers about a department of national defense.

Senator Bingham: Do you feel that it would be a wise policy for the United States to purchase enough planes at the present time to put the Navy in a state of readiness for war?

Rear Admiral Moffett: We have what we call the peace time complement, which is based on war plans. It has been gone over very, very carefully, and it is based on what we consider the number we should have in time of peace, together with certain vessels, including submarines, destroyers and ships of the line.

It is not necessary for us to have all the planes that we need in order to develop air tactics. When the Navy had the Indiana, the Massachusetts, and the Oregon, they used to talk about one battleship. I think now in aviation a great many people think about one airplane. But we are thinking, or at least trying to think and to have the whole Navy think in terms of squadrons. Training and air tactics are comparatively new, and we believe we should have enough of these squadrons for the training personnel and for that alone. And in order to train the necessary personnel that we need with the fleet we must have airplanes.

I should like to bring out here the reason we think we should have a complete complement of naval aviators and personnel in aviation in connection with the fleet, and that is because on the outbreak of war we would not have time to train aviators for fleet work. It takes years to do that.

Now aviation has gone ahead so fast that we feel the necessary number of pilots in the fleet should be reached as soon as we can, so that in event war broke out we would have people who knew what they were doing. I have tried to show that if a fleet is dependent upon aviation we should not leave anything undone to bring aviation up to the number we believe we should have—not to war strength but to the peace complement.

We can get airplanes comparatively easily. We have done and are trying to do further just what you have suggested, to build experimental types of airplanes, and have spent a great deal of money that way. We have allowed in our bill money for experimentation. The Bureau of Aeronautics is allowed by the Congress to consider the appropriation as one fund, and we can take the money from the number of ships for experimentation, and so on. That is, about \$15,000,000 can be spent in the discretion of the

Secretary of the Navy, and we are trying to do just what you suggest. At the same time we are trying to get enough planes at Coco Solo and Pearl Harbor to train the personnel sufficiently, so that if trouble should come we will have not only enough material but enough personnel. I consider personnel of course more important.

Senator Bingham: You told the Board I think that you asked for 1926 something like \$37,000,000, and that this was cut down by the Budget Committee or the budget officer of the Navy to what amount?

Rear Admiral Moffett: To \$16,000,000.

Senator Bingham: And in trying to run your department under the very great cut that was made what parts of your program have to be laid aside?

Rear Admiral Moffett: One of the items was Lakehurst.

Lieut. Comdr. L. T. Du Bose: The first request was for about \$37,000,000 for airplanes for carriers. That was recommended by the Navy Department budget officer to the Bureau of the Budget in toto. Upon receipt by the Bureau of Budget of the entire sum allocated to the Navy, that was cut to \$16,000,000. And as recommended to Congress by the Bureau of the Budget they made a slight change, to \$14,790,000, but put in an additional authorization of about \$4,900,000. Principally for new construction of aircraft, and also improvements at air stations. For the fleet to some extent, but principally new construction of aircraft.

Senator Bingham: In your testimony to us the other day you said the tendency in the past had been to lay too much stress upon the defensive theory of aviation and not enough stress upon the offensive theory.

Rear Admiral Moffett: I meant that I have heard more about spotting, and observation scouting. That is what I meant to bring out, and not enough about the offensive part of aviation. And by that I mean bombing, torpedoing, and so forth, but principally bombing and torpedoing. I referred more particularly to the planes that we carry on our carriers, what we call our air force or our offensive aviation. We carry two squadrons of bombing planes on each carrier, and we do not carry them on battleships or cruisers. They carry observation planes principally, for spotting and for some scouting, and fighting planes to attack other planes and for the protection of the ship itself. But the carriers carry the offensive aviation, or the air force.

Senator Bingham: Do you feel that the chief interest of the Navy in the past has been rather the defensive side than the offensive side?

Rear Admiral Moffett: I think that has been the tendency. Another thing, we did not have at the time, or until recently, satisfactory bombing or torpedo planes. That is, we have had such planes, but have not been able until recently to get the ceiling or rapidity of incline. We have gradually improved that, and are working it up today.

Senator Bingham: Do you agree with Commander Bellinger's recommendation to us that there should be established a school of strategy and tactics for naval aviation?

Rear Admiral Moffett: I think we can do that, establish those schools, as soon as we have the aviation personnel. At the present time we have not the personnel to do that.

Senator Bingham: How do you feel about Commander Bellinger's recommendation that we establish naval aviation experiment and test stations?

Rear Admiral Moffett: We do our test flying over at Anacostia, and do our material testing at the naval aircraft factory at Philadelphia. The naval aircraft factory can be used as a test and experimental station when the landing field there is finished. It would then be available for that use. But we have every facility now for testing, both in flight and material.

Senator Bingham: Do you agree with his recommendation that there should be a definite policy and status for naval aviation as a combatant arm of the Navy?

Rear Admiral Moffett: I think there should be.

Senator Bingham: Do you agree with his recommendation that naval aviation should be embodied in one organization handling all aviation personnel and material?

Rear Admiral Moffett: The present Chief of the Bureau of Aeronautics has had over four years' experience trying out the present plan of the Navy Department for handling aviation activities, as provided for in General Order No. 65. Material aviation is entirely under the Bureau of Aeronautics and has been entirely satisfactory.

The laws establishing the various bureaus of the Navy Department allow the Secretary to distribute the duties as he sees fit among the various bureaus under the Secretary. The organization of the Navy Department has personnel concentrated under one Bureau which is an excellent plan on the whole. The plan, however, depends for its complete success on the personalities of the persons concerned. In regard to personnel matters the Chief of the Bureau of Aeronautics can only recommend to the Chief of the Bureau of Navigation. He believes that all personnel in the Navy connected with aviation have done what they conscientiously consider to be for the best interests of the Navy, and in the great majority of cases the action taken by the Bureau of Navigation on his recommendations have been satisfactory. However, I submit that the Chief of the Bureau of Aeronautics, owing to his close contact with the personnel of aviation, and to the fact that his duties are primarily and almost entirely aviation subjects, is in a better position to judge the needs of aviation personnel than others, and that instead of having the power only to recommend what should be done, he should have more control than at present; that is to say, he should, under the Secretary and Chief of Naval Operations, control policy, training and detail of aviation personnel as far as the numbers allotted by the Secretary of the Navy for aviation permits. I do not mean that there should be a new Bureau of Navigation in the Bureau of Aeronautics, but that no recommendations as to aviation personnel policy or training should be turned down without reference to the Secretary, and that no action in regard to policy or training should be initiated or acted upon without reference to the Bureau of Aeronautics.

My ideas with regard to correcting the aviation personnel situation in the Navy have not changed since I transmitted the report of the personnel board of the Bureau of Aeronautics to the Secretary of the Navy. In an endorsement on this board's report, I stated that this whole problem was so complex that even after long association with the officers most interested I was unable to arrive at a decision. As an example of the wide diversity of opinion, I transmitted the "Bartlett Plan" and the "Whiting Plan." I prefer to wait the results of the Board's report before making any recommendation for changes in the organization of the Department and hope it will not be necessary.

I have declared myself as opposed to a separate corps in the Navy, similar to the Marine Corps, for aviation. I have had experience with a

corps—the Engineering Corps—and for psychological reasons it does not work. The personnel in naval aviation constitutes an integral part of the Navy. I believe a corps perhaps would result in aviation advancing more rapidly at present, but while it might be better for aviation itself, it would not, in my opinion, be best for the Navy as a whole. It would create jealousy and animosity towards its personnel as far as the Navy is concerned, especially on board ship. The Army is composed of corps, and what might be best for the Army would not necessarily work for the Navy. However, as I said in my statement, the problem is one of administration, rather than organization. Further, since my appearance before the Board on September 22, there has been a Board appointed by the Secretary of the Navy to consider the personnel situation, and I hope that board will recommend a policy and plan which will remove the causes for uncertainty and dissatisfaction among the aviation personnel as well as provide for an adequate aviation personnel.

Representative Vinson: I take it you make no recommendations now with reference to the widening of the authority of the Bureau of Aeronautics with reference to personnel?

Rear Admiral Moffett: Not now.

Representative Vinson: And that is due to the fact that you desire to have the Board work out a plan, or due to the fact that you think things might work out better under present conditions?

Rear Admiral Moffett: Both.

Representative Vinson: Now, if your heads of Bureaus, or you as head of the Bureau of Aeronautics have to go through the Bureau of Navigation, do you not think, your plans will not be passed by the Bureau of Navigation, and that it would cause development to be interfered with?

Rear Admiral Moffett: I think it would.

Representative Vinson: And that would be detrimental?

Rear Admiral Moffett: I think it would, and in a case of that kind, I would take it up to the Secretary.

Representative Vinson: Then you are of the opinion that the Bureau of Aeronautics and the Bureau of Ordnance should have the voice that they have today?

Rear Admiral Moffett: I am satisfied to continue that way.

Representative Vinson: Do you change your attitude on that after more mature deliberation, or hoping that conditions may improve and the Bureau of Navigation might be more generous?

Rear Admiral Moffett: Both, or all three.

Senator Bingham: Has the President's Aircraft Board got to wait now on the Navy and this new Board?

Rear Admiral Moffett: I would say, so far as my recommendations go about that, if I could make one, disregard the Board in the Navy Department; and if you ask me what I recommend about the personnel, I would say I have stated I am opposed to a corps, but I am generally in favor of the plan proposed by Commander Whiting.

Rear Admiral Moffett: I approve of the Whiting plan. Now, so far as I have listened or heard the testimony of the people in favor of a corps, I think the testimony has been given by a majority of the people who have either been on the shore most of the time or not much of the time at sea. Over half of my service in the Navy has been at sea. I always think of the Navy as at sea. I do not see it on shore at all. I always picture it on the battleship, and all that that means at sea. The corps of Artillery and Cavalry may be efficient in these different functions, because they cover a large area. On board ship the personnel element comes in every day of the week and every night, for that matter. There it is conflict or harmony. Now, I picture another corps of specialists in a different uniform and doing other work and getting mixed up with these people on board ship; they may stand watch or they may not; they may be restricted to aviation duty. And anything that engenders trouble on board ship is to have anyone who does not do his full share. I would say the prejudice was against the sky pilot because the sky pilot did not have much to do, except on Sunday. So I believe a corps would be wonderful, but it has a great many things to control it, a central control. The personnel element appeals to me very strongly. I said that here the other day, but I do not believe if you had a corps it would work. I saw the Engineer Corps, who have a much more difficult course at Annapolis, and the Engineer Corps had to study more, and yet on board ship they had a very tough time. Incidentally, they got a little more pay than other people did, and that attracted attention and caused friction and jealousy, and from my experience on board ships of all types, I do not believe a corps would work. I would not have any corps. I would put them all on one list, no matter what the fellow is or what he did.

The Chairman: That would not be so under the Whiting plan.

Rear Admiral Moffett: No. The Whiting plan starts out by getting a corps and training them and going to sea.

The Chairman: What I mean is, the statement you just made of having a general list would not be true of the Whiting plan, would it?

Representative Vinson: Under the Whiting plan they would remain on the general list, and a commander reaches his rank at 32 and the others at 36.

Rear Admiral Moffett: Mr. Vinson, I would like to say that feature of the plan I do not agree with. I have some notes here; that feature I do not agree with. I think it would cause trouble, and while it would be an advantage, perhaps, to do it, it is a principle that has been adopted in time of war to brevet appointments, and it is adopted now by giving the Chief of the Bureau temporary rank.

I think it is perfectly logical for Operations to handle Aircraft, like they do now, ships. If the Bureau of Aeronautics were handling airships and giving orders to go, you would have quite a confusion. So far as operations go, everything is all right and satisfactory.

As to the Bureau of Navigation, I think the system is all right. The features may vary. My relations with the Bureau of Navigation have been, on the whole, satisfactory. I mean, they have granted most of my requests.

Major General Harbord: Does it not seem to you then, in view of the testimony here, that these younger aviators are seeking some greater latitude for you, or authority, which you, yourself, do not want? Is that true?

Rear Admiral Moffett: Well, the aviators that came here heard me say that I would like to have more control of personnel, just what I have said here. I have not in any way tried to guide them, or test them in any way in coming up here. They have been entirely free. In fact, I have not wanted to know what they were going to say or do, and I have not. I do not know. When I suggested anybody, I have suggested people that I thought were in position of experience and knowledge and temperament to give the greatest amount of information to this Board.

Coming back to that question of the control of personnel, I realize, and I have realized more since I made my statement the other day, that I think if the Bureau of Aeronautics had control of its personnel that it would, in the first place, upset the organization that they have had in the Navy Department and gone on for a long time. If the Bureau of Aeronautics were given definite and positive control of personnel under the Secretary of the Navy, while I think I could accomplish more, then the question arises whether that transfer would not cause friction and animosity and resentment on the part of the Bureau of Navigation. And it may be for the time, I believe, for the best interests of the Service that, no matter what I may personally feel in the matter, I may be mistaken, and that the present plan will work.

The Chairman: You testified that the Navy had on hand 860 planes and 177 under order.

Lieutenant Commander Du Bose: There is a total of 864 on hand and 177 on order on the 1st of July. That has not been tabulated exactly that way, in that form, but it is materially correct. There may be a few planes crashed, and the 860 on hand of those 684 were fit for flight.

Rear Admiral Moffett: Aside from the intrinsic merits of the case, that is to say, whether a commissioned officer or an enlisted man can make a better pilot, we admit that a man of education and training will be better. Of course, the cost comes in there, but I say that we ought to have the commissioned personnel complement filled because our situation in time of war would be quite different than it would be in any other branch. We ought to have all the commissioned officers and pilots we can possibly get in time of peace, because they would be needed in the fleet, and we would have to take civilians from perhaps other duties, and we could not take the men and time to train those men.

Mr. Coffin: Is it or is it not true that the technical development in aviation in this country is such that foreign nations are now buying motors, propellers and the designs of aircraft, and so forth, in this country?

Rear Admiral Moffett: That is correct. I would like to say something about nonflying officers in control of aviation. I would like to say that our system—I do not think that they referred to the Secretary of the Navy, the Chief of Naval Operations, the Chief of the Bureau of Navigation, or possibly myself, or whether they referred to the airmen, or what they did refer to, because none of them have ever stated, or at last with very few exceptions that I know of—I would say that our system of government requires a civilian President and Secretaries of all the Departments. I think it would be most unfortunate if any change were made in it. The Chief of Naval Operations regulates the ships, including planes, and I think he should. I would say that he invariably, with hardly an exception, none that I can ever recall, ever knew anything about the movement of a ship or plane, including the airplane, and including the Shenandoah, without consulting the Bureau of Aeronautics or getting their recommendation.

The criticism may be directed at the Bureau of Navigation; I do not know. I would say that they have the final responsibility and control. They may refer to the Chief of the Bureau of Aeronautics; I do not know. I am an observer. I would say that the nonflying personnel is indispensable to the Bureau and throughout the organization, including ships, tenders, tugs, shore stations, and the mechanics who handle the ships.

In regard to the nonflying personnel controlling aviation, I do not know of a more outstanding accomplishment in aviation than that of the Post Office Department under the control of Col. Paul Henderson, who I do not think is an aviator.

STATEMENT OF REAR ADMIRAL CHARLES F. HUGHES, U.S.N.

Rear Admiral Hughes, under orders to take command of the battle fleet, said he graduated at Annapolis in 1888, and since has had wide duties at sea and ashore.

The Chairman: We would like your opinion upon the general question of an independent air force, and from the point of view of a commander at sea what your opinion is on this question that has come before the Board as to the necessity of unity of command.

Rear Admiral Hughes: My idea in general is that a naval aviator to be of use to the Navy must first be a naval officer and a seaman. The conditions under which he works require a naval training in tactics, strategy and traditions. He must know the problem of each of the other departments, the submarine, the destroyer, the battleship, the cruiser or the scout. He must have been trained with these officers so as to know what information they need, the form they need it in and what will be their probable action when they receive it.

A corps with executive authority would be parallel to the present executive corps. Well, parallel lines meet at infinity. They would tend, if anything, to separate. There would be friction, and when they are under the united eye of one another they would look together. But they must look to one common end for their own betterment, their own future, their promotion. There must be unity of procurement, of supply and command.

The admiral at sea, or whoever may be in command, only looks at one source, the Navy Department. The corps that we have now are small; their duties are well defined, thoroughly efficient, but they have no part in the execution of the war plan.

The Navy exists primarily for war. It must get command of the sea and drive the enemy away from the sea and see that our ocean-going commerce moves with reasonable freedom.

A separate flying force would be of practically no use to the Navy. They would be under the Navy and they would not be really in the Navy.

The aviator has become one of the virile forces of the ship. He must be trained because his operations are away from the immediate command of the commander. The commander must have implicit confidence that he will carry out his directions, and the aviator must have implicit confidence that the man that sends him is going to look out for him.

A separate corps means a separate clothing. There is a distinction that is drawn, and on board ship you only want one crowd.

The Chairman: What objections, if any, have you to a separate corps of the air which functions through the Bureau of Operations under the same general staff, to use Army parlance?

Rear Admiral Hughes: That would simply mean officers carried on the general list for aviation duty only, I should imagine.

The Chairman: It would be a little bit like the Cavalry or Infantry or Engineers in the Army. They have a group, but within the Army as a whole and subject to functioning through the Army general staff?

Rear Admiral Hughes: Yes, sir.

The Chairman: It might be on one lineal list and might have separate promotion lists as the Army had before the Act of 1920?

Rear Admiral Hughes: The main part of it would be that they still would have separate ideas. If it was a separate corps of specialists, I think you would have to teach a naval aviator, except with considerable experience, to be a naval officer or a seaman, but a seaman, if he gets his training young as a naval officer, can be taught to be an aviator. We have had very successful ones under that plan now. The ideal naval officer knows something of all possible professions and is perfect in one.

The Chairman: Now how are you going to bring that about in the Navy, that specialization, and make it attractive to the various groups of specialists, give them security in their specialty and still make them available for the high command?

Rear Admiral Hughes: Well, we are doing it now under our present system, sir. We have engineers, people that are doing engineering duty, that are coming along to command. The gunner is highly specialized, and a gunnery officer steps to command with the greatest of ease. Submarine work is highly specialized. They step in to commands of larger ships and commands of squadrons without any difficulty. And the same thing with the destroyer. They are all working together as a whole.

The Chairman: You do not consider the airplane as a revolutionary enough thing or an exceptional enough case to require a higher degree of specialization than any of these arms that you have just mentioned?

Rear Admiral Hughes: I do not.

The Chairman: Do you look upon it as the difference in degree but not in kind?

Rear Admiral Hughes: Yes, sir. I think it is something that can be solved among ourselves.

Senator Bingham: Commander Bellinger recommended a definite policy and status for naval aviation as a competent art of the Navy be established.

Rear Admiral Hughes: I agree with that perfectly.

Senator Bingham: Second, that naval aviation be embodied in one organization handling all aviation personnel and material.

Rear Admiral Hughes: No, sir.

Senator Bingham: Third, that naval aviation be recognized as a definite and permanent career for officers and enlisted men of the Navy.

Rear Admiral Hughes: I do not agree. I think they must interchange with the duties of navigation, gunnery, engineering, and such others in aviation, general ship duties.

Senator Bingham: Fourth, that there be established what may be termed a flight line to determine succession to command.

Rear Admiral Hughes: I could not answer that unless I know who is in that line.

Senator Bingham: Fifth, that the command of aviation activities, including aircraft carriers and tenders, be vested only in officers permanently assigned to naval aviation.

Rear Admiral Hughes: No law or no recommendation can fit a man to command a ship. That only comes from experience.

Senator Bingham: Sixth, that there be established a separate system of promotion for the personnel in naval aviation.

Rear Admiral Hughes: No, sir.

Senator Bingham: Seventh, that at the time of reorganization of naval aviation the question of relative seniority of those officers already in aviation and those who afterwards may enter in the organization be definitely fixed in order that naval aviators may have some definite outlook for their future.

Rear Admiral Hughes: Well, I disapprove of the plan, but if the plan goes through that should be done.

Senator Bingham: Eighth, that there be established a school of strategy and tactics for naval aviation.

Rear Admiral Hughes: We have it now, the fleet. Tactics must come from the fleet; it does not come from schools.

Senator Bingham: Ninth, that there be established a naval aviation experiment and test station.

Rear Admiral Hughes: They need it. I have thought the Philadelphia aircraft factory was that. In saying that tactics come from the Fleet, tactics are practical. About three years ago the Fleet began to have naval aviation and development work, under Admiral Eberle, that first started in by building up spotting and target practice when all the ships were firing at the same time. It was turned over to me partly, to begin with, and later Admiral Eberle took it himself, and for nearly five weeks, four days a week, whole squadrons of planes flew and practiced these formations, and then communications.

Next, the shooting from the Navy anti-aircraft guns had been entirely of kites or balloons, and that did not represent in any way the solution of the problem of the anti-aircraft. Under Admiral Eberle, with Commander Bellinger, as commanding officer, Captain Butler, and later Captain Marshall, we developed what is now the towing fleet. When the fleets came together two years ago, the commander in chief of the Fleet ordered a Board, of which Captain Gerardy was president, and of which Captain Marshall was a member, and the rest being active fliers, to reconcile the two regulations as to squadron and section flying. When this was done it was sent to the Department, referred to the Bureau of Aeronautics, the Bureau of Aeronautics returned it to the Chief of Navy Operations with its comment, and with those comments the office that I had charge of compiled the tactics for aircraft squadrons. In compiling this it was done by Captain Marshall, who had a very wide experience as an aviator, and Commander Townsend, who had commanded aircraft service in Europe. Almost daily consultations with aviators took place, and I remember that consultation took place with Commander Whiting, Mitscher, Burg, Paunack, Bartlett, Otfie, Mead, and Jeter, and two Army aviators, one of whom was named Dallas, but I do not remember the name of the other one. We borrowed the Army aviation tactics and used what expressions and forms they had that the aviators agreed was available for our service. When this was done these tactics were submitted to the Bureau of Aviation, the Bureau of Aeronautics, came back with their approval, and were then issued to the Service and are now being used.

Senator Bingham: We have been told that anti-aircraft was not effective, and that anti-aircraft guns on board ship could not hit the sleeves towed at any reasonable altitude. Have you had any experience with the actual practice of anti-aircraft guns on ships under your command?

Rear Admiral Hughes: I have, sir, and also in my office I have a record for the past year. The sleeve is about five feet in diameter and twelve feet long. Owing to limitations of towing over the water, we can tow at an altitude of about 5,000 feet, or 5,100 feet.

Senator Bingham: That is about the altitude which bombing planes succeed in reaching, at present.

Rear Admiral Hughes: It is a good distance for them, one of their test striking altitudes, but the exact limitations of the planes I do not know. A plane that flies over the water can not carry as big a load as one that flies over the land. We fired 36 practices; 17 sleeves have been hit; 47.2 per cent of the time we have hit the sleeves. Three of them have been shot down. We shoot up to an angle of 75 degrees, and the target represents about one-eleventh of the projected area of a plane.

Senator Bingham: When you say more than 40 per cent of the time you hit the sleeve, does that represent actual hits or constructive hits?

Rear Admiral Hughes: The Navy does not deal with constructive hits, sir.

Antiaircraft is the principal issue in the Navy. We have increased the percentage of its merit with the ships. We are carrying on experimental work all of the time as to method, and the Bureaus are furnishing us new instruments. Antiaircraft gunfire is advancing faster than is aviation.

The plane that goes to sea has a ship as its objective. If the plane is not coming directly at the ship it can not hit it with a bomb. The trajectory of the bomb is the result of its speed and gravity, and it must be coming toward the ship. In the case of the Army, they must deal with the plane coming in any direction, because the objective of the airplane is not the battery firing at it, but something to the rear or to one side of it. In the Navy the ship alone is the objective.

Senator Bingham: You feel that what has already been done toward the development of antiaircraft guns, and with what is on the way, that it is going to be about a 50-50 chance whether an airplane squadron can get into a position from which it can bomb a small target?

Rear Admiral Hughes: They can not all get there now, sir, unless they go to a very much higher altitude than they have reached. It makes it a very serious thing for them. The main trouble with our antiaircraft target practice is the small size of the sleeve that we can throw from a heavier-than-air machine.

We fired 835 shots at a sleeve towed by the Shenandoah, and there are 807 holes in the target, of which 12 are holes where a full shell had gone through. This was towed at about an altitude of 5,000 feet, and was a large sleeve, 10 feet in diameter by 45 feet long. The speed was only 30 knots, but that was because the wire was not strong enough to hold it at any other speed.

Senator Bingham: Do you think it would be possible to develop a type of sight which, operated from the ground, would enable the antiaircraft battery to anticipate the exact position into which a squadron must come in order to bomb a small target, like a battleship or a fortress?

Rear Admiral Hughes: Yes, sir.

Senator Bingham: So that a barrage could be placed at that particular point to which the squadron would have to fly?

Rear Admiral Hughes: We have that, sir. There is a certain inverted cone that they must be on. We can figure their speed and altitude, and therefore we know the place where the dropping must take place. I have worked it out. Allowing the danger space that we have spoken about, if it was flying across the ship's beam, which is the best way, it would only have one second, going at the rate of 100 miles an hour, in which it could be sure of making a hit. Going the length of a ship, it would have about four seconds.

Senator Bingham: Then, from the point of view of the new commander of the battle fleet, you are not greatly disturbed by the possibility of planes putting your battleships out of action?

Rear Admiral Hughes: No, sir; but they are a very serious menace. I am not belittling the plane at all. I want them, but I want them under my command, and I want them loyal to me, sir, and not to anybody else.

STATEMENT OF CAPTAIN GEORGE W. STEELE, JR., U.S.N., IN COMMAND OF THE NAVAL AIR STATION AT LAKEHURST, N. J.

Captain Steele said he graduated from the Naval Academy in 1900, organized the first fleet air force of flying boats, seaplanes and kite balloons, made the trans-Atlantic flight with the ZR-3, and commanded it when it became the Los Angeles, and has had 750 hours in the air.

Captain Steele: Lighter-than-air craft I believe will prove of great value as naval scouts, and possibly also as dispatch vessels, if such be needed in addition to radio communication.

From the point of view of naval lighter-than-air craft, this service of scouting would necessarily be bound very closely with the chief command of the fleet. I think what we need now in airship service is an opportunity to develop and to practice and to train more officers in the operation of this type of craft.

There is no dissatisfaction at Lakehurst with existing conditions, either as to personnel or material. The loss of the Shenandoah has been a severe blow to lighter-than-air of the Navy, but it is our desire, and I believe it is the Department's intention, to carry on in lighter-than-air, and to go ahead with its development as funds become available.

Senator Bingham: What is your opinion of the future of ships similar to the Los Angeles with regard to commercial aviation?

Captain Steele: I think that there is a definite place in commercial transportation for lighter-than-air craft over the seas. The competition with express trains would impair their usefulness over land, but steamers seem to have reached about the limit of their speed, and the airship has not begun to reach its limit, and still it is much faster than the steamship.

Senator Bingham: You do not, then, look forward to airships as having much military or commercial value over land?

Captain Steele: No, sir.

Senator Bingham: With regard to their value as scouts over water, it has been claimed that they are extremely vulnerable to fire from pursuit planes. Would you think that that vulnerability was sufficient to endanger their value as scouts?

Captain Steele: I think that it will have an effect on its value, but we have not done anything more than the rudiments toward defending this craft, or providing them with defensive armament. A ship of 5,000,000 cubic feet capacity, which is capable of lifting 150 tons including its own weight, will have sufficient useful lift to carry defensive armament in addition to its fuel. At the present time with the Los Angeles the fuel would take up about all the useful lift if she were sent on a long scouting problem.

Senator Bingham: Are any airships being constructed anywhere in the world of about 5,000,000 cubic feet capacity?

Captain Steele: There are two 5,000,000 cubic feet ships projected in England for communication with India and Australia.

Senator Bingham: Would you in operating the Los Angeles prefer to use helium or hydrogen?

Captain Steele: I prefer to use helium. The Los Angeles crossed the ocean with hydrogen. When she left Germany she had 29 tons of gasoline. She could not make the trip with helium because she could not carry that much fuel. But within the limit of her radius of fuel the operation is practically the same whether using hydrogen or helium—the object of the gas to be to keep her in the air.

Senator Bingham: We have been told that airships might readily be used as aircraft carriers.

Captain Steele: I think that all that has been done about that is talk. At one time a statement was made that an airship carrying airplanes could leave Europe, proceed to a point within 250 miles of New York, release enough bombers to destroy the city, and return and hook on to the airship carrier and return to Europe.

That was quite an interesting proposition, and we worked it out at Lakehurst that if the 5,000,000 cubic foot ship could get the airplane up inside of her, so as not to impede her progress by hanging in the stream line, that she could carry one plane to a point within 250 miles of New York, and that that plane could carry one 1,000-pound bomb, and that that was all that she could carry if she were to get back home.

The Army Air Service has actually hooked a small plane on to a non-rigid airship.

Major General Harbord: What, generally speaking, is the comparative cost of an airship like the Los Angeles to that of the ordinary airplane?

Captain Steele: The Los Angeles in Germany cost \$750,000 (3,000,000 gold marks.) The Shenandoah, being the first ship built in America, and being continuously changed in design and construction during the progress of her building, cost something like \$2,000,000.

Major General Harbord: Will you just sum up in general the difference between the mission of the airship and the airplane in war.

Captain Steele: The airship is a long distance craft. It is not maneuverable to the extent that the airplane is. It is not suited for combat. It is dependent upon bases or mast ships, and I do not believe that it can take the place of any airplane, except probably the long distance plane like the PN-9. And I think that the use of the airship is such that no plane can take its place. The Los Angeles has not made any record since she was filled with helium. But on the transatlantic flight she covered 5,600 miles in 81 hours. She has since then flown to Porto Rico and return, the longest flight she has made since we had her. The flight to Porto Rico from Lakehurst was made in 31 hours.

Major General Harbord: What about the relative vulnerability of the airship and the airplane?

Captain Steele: If you assume that they are struck the airship is not as vulnerable when filled with helium as the airplane is, because if either one is struck there is more chance of the airplane being hit in a vital part than there is of the airship.

Major General Harbord: Can a commander who runs an airship necessarily be an airplane pilot, or is an airplane pilot especially adapted to running an airship?

Captain Steele: The operation is entirely different. The only similarity is that they both fly through the air.

Major General Harbord: If you admit that you have to have a separate corps for aviation personnel for airplanes, would you have to have a different corps necessarily for airships, or would you have the one corps?

Captain Steele: You would have to have a separate list.

Major General Harbord: But within the other?

Captain Steele: Yes, sir.

Major General Harbord: What about obsolescence of these ships as compared to planes?

Captain Steele: The method of Zeppelin construction has been practically the same since they began building in quantity for the war.

Major General Harbord: Can America build them as well as anybody else can, and as good?

Captain Steele: It was the general opinion that the material of the Shenandoah was better than that in the Los Angeles. And the workmanship is a question of skilled men, and I think that the Shenandoah was also as well built.

Major General Harbord: If we needed them we could turn them out in quantity production as fast as could any other country in the world. I suppose?

Captain Steele: Yes, sir.

The Chairman: General Harbord asked about the relative vulnerability in war of the airship and the airplane, and you answered in substance that if you admit a hit the airplane was more vulnerable than the airship?

Captain Steele: The airship offers a bigger target, and she would probably be the easier to hit. But it is surprising how rapidly the apparent size of an airship diminishes as soon as she leaves the ground. Even if you stand at the mooring mast when the airship is there you can see her entirely, whereas if you haul her down the 150 feet you can only see one end of her. Then when she leaves the mast she loses size very rapidly, and I do not believe that she would be as easily seen by hostile craft as is generally supposed by people who see this airship close by. In other words, you have got to find her before you shoot at her.

The Chairman: I assume that there is no question that an airship could fly across either ocean with a disposable weight of bombs that would be very destructive if such ships reached their objective unimpeded.

Captain Steele: The actual destruction caused by the German airship bombers during the world war I believe was greatly overrated. But the moral effect was greater than the actual destruction.

The Chairman: Well, so far as the physical capacity of the airship as opposed to the airplane is concerned to make the long journey with a 2,000-pound bomb, or more than 2,000 pounds in the airship, I suppose would be admitted by all that it could make the journey?

Captain Steele: Yes, sir.

The Chairman: Have you any views on our present equipment to effectively resist a raid of airships at the present time?

Captain Steele: I think that our defense in that case would depend upon listening devices, because if an airship came over to bomb our coasts she would be careful to arrive in darkness, and unless you became aware of her presence by some other means than sight she could at least arrive at her destination, but whether she would ever get away again would be

questionable, because the fact of her dropping bombs would betray her presence.

Major General Harbord: Do you as a captain have the dissatisfaction that has been expressed by the younger aviators in the Navy?

Captain Steele: No, sir.

Senator Bingham: From the point of view of heavier-than-air, for the moment, what would you suggest as the best plan of handling the heavier-than-air personnel and relieving this almost universal unrest we have heard of during the past week from naval aviators regarding their status, their future, their ability to be detailed in and out, sent away from aviation?

Captain Steele: I think that naval aviation is a handmaiden for the Navy. I think that its usefulness depends upon the use it may be to the fleet; and I think either an air force or an air corps would be against the best judgment of the arm that naval aviation is to serve.

Senator Bingham: As one who has specialized in aviation, what do you think of Colonel Mitchell's plan of a united Air Service?

Captain Steele: I am unqualifiedly opposed to it.

STATEMENT OF MAJOR EDWIN H. BRAINARD, U.S.M.C., OFFICER IN CHARGE OF MARINE AVIATION HEADQUARTERS, AND MARINE AIDE TO THE SECRETARY OF THE NAVY

Major Brainard was commissioned a lieutenant in 1909. Saw considerable service in the World War; was part of the Army of Occupation; became a naval aviator in 1921 and later qualified as an Army pursuit pilot.

Senator Bingham: Has your status as a part of a strange and separate corps made it difficult for you to serve your country when serving under naval or military commanders?

Major Brainard: No, sir.

Senator Bingham: We have been told by quite a number of lieutenant commanders who are naval aviators that they would like to have in the Navy a separate corps for aviation, based on the lines of the Marine Corps. Assuming that they knew their job and were loyal to their superiors, can you see any reason why such a corps would not succeed in time of war, from your point of view as a marine officer?

Major Brainard: Personally, I do not believe that there should be any difficulty in combining or having a separate corps work with the Navy.

The Chairman: Functioning through the Secretary of the Navy, or Chief of the Bureau of Operations?

Major Brainard: Both. The Marine Corps functions under the Chief of Naval Operations, with the Secretary of the Navy as its head. Actually I think there would probably be considerable difficulty. In the first place it is bitterly opposed; there would be a great deal of feeling of that sort of thing, but there is absolutely no reason why it should not work just as well.

Senator Bingham: What is your opinion regarding Colonel Mitchell's plan regarding a united independent Air Service?

Major Brainard: From the aviator's standpoint, I think it would undoubtedly develop aviation to its fullest extent in the shortest possible time. But under present conditions I am afraid that it would not work, either with the Army or the Navy. If the Army and Navy and the Air were made three branches under one minister, and that minister had the power to decide absolutely, possibly it might work. That is just my idea of it.

Senator Bingham: Major, how does the training station at Selfridge Field, to which I think you were attached at one time, compare with similar training in the Navy.

Major Brainard: The Navy has what they call a combat school at Pensacola, and they also have combat work with the fleet. I am not qualified to state from personal knowledge, but from what I have been able to gather they do not go into it nearly as thoroughly as the Army does and have not taken up the tactics to any great extent; whereas the Army has gone very deeply into the tactical maneuvering of pursuit planes and tactics to be adopted in air fighting.

Senator Bingham: Major, do you visualize air tactics as being something quite as different from sea tactics as sea tactics are from land tactics?

Major Brainard: Yes, sir.

Senator Bingham: Can you suggest any reason why it is that some of the nonflying officers have so much difficulty in visualizing air tactics as being somewhat different from sea tactics?

Major Brainard: As a matter of fact, the majority of them do not know what air tactics are. In the Navy I am inclined to believe that they think only in terms of the fleet and individual planes for spotting work without stopping to figure out how they are going to keep those spotting planes in the air. Personally I do not believe that they will be able to keep the spotting planes in the air against any first-class power that has got an air power without they can meet that power with a superiority of fighting ships and superior air tactics. Certainly no power is going to allow them to send planes over a spot near gunfire without their having something to say about it. I believe that that air force has got to be commanded by—naturally the commander in chief is supreme, and it does not make any difference whether he is an air officer or whether he is not; he has got other people there to advise him, but the actual operations in order to get the most out of the air force have got to be commanded by officers who know something about it.

Senator Bingham: How does the commander in chief keep in touch with the marines in the landing operations?

Major Brainard: Through its fleet marine officer. He has an aide on his staff called the fleet marine officer, who is there for the purpose of advising the commander in chief on the use of marines.

Senator Bingham: Can you see any more difficulty in his operating his air forces than he has at present in operating his land forces?

Major Brainard: No, sir; providing his air forces have been with the fleet in order to assimilate all the ideas and know—in other words, take the language of the fleet.

STATEMENT OF CAPT. JAMES T. MOORE, U.S.M.C.

Captain Moore said he was 30 years old; entered naval aviation at Pensacola in 1921; took the Army advanced pursuit course; has had 1,150 hours in the air and is now in command of the squadron of seven observation planes at Quantico.

Senator Bingham: Have you ever known of any acute dissatisfaction among personnel in the Marine Air Service?

Captain Moore: Yes, sir. I attribute it mainly to the five year detail. I believe that is the primary cause. I understand that this condition has been corrected due to the efforts of the officer now in charge of Marine Corps aviation, Major Brainard. Secondly, to the fact that we are given orders and our whole efforts are controlled by people in authority who know nothing of aviation.

Senator Bingham: What would you suggest as a remedy?

Captain Moore: I think the one and only one is the one suggested by Colonel Mitchell of the Army for a separate air force. Put it in control of an air officer and let him work out the detail. I have spent many hours trying to think of a second best solution, and I know of none but that that will help in any way. The second best is a separate air force.

Senator Bingham: Are you familiar with the plan suggested by Commander Bartlett of a separate corps in the Navy?

Captain Moore: To a degree; yes, sir. I disapprove of it. Because the people that control a separate corps of the Navy, I believe, will be the same people that now control the Bureau of Aeronautics, and I do not see where any change whatever will take place.

Senator Bingham: Captain, we have tried very hard to get expression of opinion from naval aviators from all ranks with regard to their desires and with regard to what they have heard by conferring with others, and practically none of them appeared to agree with your idea.

Captain Moore: Yes, I understand that perfectly. As I say, they will not come in and state it.

Senator Bingham: You believe, then, that the Board has been misinformed?

Captain Moore: Yes, sir, I believe that these officers hesitate to express their inner feelings. As I say, that is only my individual opinion.

STATEMENT OF LIEUT. A. G. McFALL, U.S.M.C., EXPERT PILOT FOR FLEET

Lieutenant McFall stated he graduated from the Naval Academy in 1916, entered aviation in 1920 and has been on that duty since.

Lieutenant McFall: I do not believe in a separate air service. I feel that it would be unsound and simply couldn't work satisfactorily.

I do not believe in a corps in the Navy. I can't see how a man can stay in a corps, work up to the grade of captain, and ever qualify for a command of a carrier.

I am convinced there is unrest at the present time in aviation, but most of the unrest has been caused by the same reasons which have caused similar unrests among the junior grades of the Navy. It is my conviction that the unrest in aviation has been caused by the following reasons:

- (1) Personnel bill—Britten.
- (2) No definite policy of the Bureau of Navigation.
- (3) Ex-reserve officers' uncertainty.
- (4) The danger of the Bureau of Navigation taking away flight pay.

I believe all of these reasons can easily be taken care of by the proper cooperation in the Navy Department itself. My recommendations to care for some of these are as follows:

(1) Aviation physical examination for all of those entering the Naval Academy.

(2) Aviation similar to the Whiting plan at the Naval Academy.

(3) One year sea duty in the fleet after graduation.

(4) A five-year detail to aviation.

(5) One year sea duty in the regular line, at the same time having orders involving flying, so that you could keep up with aviation. This year should be on a ship carrying planes.

(6) From this period on, I would suggest a minimum of one year regular line duty in battleships or cruisers for each grade before promotion to the next grade, in all cases to have orders involving flying (flight pay).

(7) Those officers who have come in from civilian life I would suggest aviation duty only, similar to engineering duty only. This could be done by a small amount of legislation.

(8) For the next three years, or until aviation has caught up in its complement for carriers and extra squadrons formed, I would make temporary increases in equipment at Pensacola to care for extra large classes.

(9) Similar returns to regular line duty from aviation duty as recommended by Commander Whiting.

(10) Although I think it is preferable to have a qualified naval aviator, who is qualified to handle a big ship, in command of a carrier, I can see no good reason why carefully selected captains who have studied the aviation game and who are qualified observers, should not be very able and efficient officers for our carriers.

(11) I believe that for the good of the naval service and also aviation, an aviation observer's course should be installed at the Naval War College, so that all officers attending might have the opportunity to qualify. This could be done during the summer following the completion of the college course. In this way, all officers of flag rank would have a very good knowledge of aviation and could understand the aviator's viewpoint.

(12) There must be a change in promotion examinations. There are certain common requirements for all naval officers, such as navigation, seamanship, strategy and tactics, and international law, but every officer taking examinations should be able to select one engineering subject and be responsible for that only.

Finally, I would like to say that I firmly believe that with a qualified aviator, one carefully selected, in the Office of Naval Operations and one in the Bureau of Navigation and let them sit in on all the conferences and explain the aviators' viewpoint and really start cooperation instead of petty jealousies among the bureaus, I think with the exception of a small amount of legislation, everything can be worked out among ourselves to the mutual benefit of all concerned.

STATEMENT OF MAJOR THOMAS DEWITT MILLING, U. S. A.

Major Milling stated he is 38 years of age, learned to fly in 1911 and has been since connected with air operations.

Senator Bingham: For the purpose of the record will you outline to us the work of the Air Service Tactical School at Langley, of which you had command for five years?

Major Milling: There is nothing just like it in the world. The French organized one about eight months ago, and one of the graduates from our school finished that course. He says it does not compare with ours at all.

In organizing the school there were three main principles we tried to keep in view. An air commander is different from a ground commander or a naval commander, for that matter, although a naval commander more nearly approaches him. That is due to the fact that he has got to have not only tactical knowledge, but also technical knowledge. He has a great deal of technical equipment to deal with, and so far as tactics are concerned, it is the fastest cavalry raised to the nth degree, you might say. So that in organizing the course, the idea was to turn out men who could be chiefs of Air Service or armies, could command air brigades, air divisions, act as staff officers under such command. Therefore in organizing the course the students were given sufficient technical knowledge so that they could control and be able to handle their technical staff officers. Secondly, they were given sufficient tactical knowledge, not only in mathematics, and in the handling of each branch of aviation; but in the handling of these branches in combinations, such as we have in our combat aviation, and in the Air Force. Also in the use of observation with ground forces, cooperation of air forces with ground forces and water forces. In order to cooperate properly with ground forces and water forces it was also necessary that they get some basic training in the tactics and technique of the various branches of the armies, alone, and in combination. That necessarily is included in the course. They are also given a short course in the composition of navies and fleets, and in general how they operate. It took us three years until we finally got books in such shape that they could be printed and today, so far as I can find out from our military attaches, those are the only manuals or books existing on tactics, as we understand them today, and which we have evolved in the employment of various branches of aviation, alone, and in combination.

The tactical principles that we have evolved in connection with aviation differ entirely—I would not say entirely—but we have gone way beyond the tactics that we used during the war. From what I can gather from the French, the French are still using the same tactics, that is in pursuit and things of that nature, which were used when the war stopped, so as a consequence I think we have made a big advance.

I think, in so far as our school is concerned, which has been fully attended, our men can go out and go with an army and work on the same basis with them without friction, and do their work in a very efficient manner. That was the original object of the school. At the same time they can handle air units up to and including divisions in the Air Service.

Senator Bingham: What do you require of the students who enter your school?

Major Milling: They must be pilots. Our school, of course, is for officers of field grade. During the first three or four years we were unable, due to a shortage of personnel, to get officers of that rank, and we put through a great number of lieutenants. At the present time it is limited to field officers and high-ranking captains. They must be qualified aviators.

Senator Bingham: Do you think the very remarkable work that this school has done for our problem of national defense, has been appreciated by the people of the country?

Major Milling: No, sir, I do not think it was appreciated until we had the maneuver with the War College year before last. I think it is thoroughly understood now by the War College, and that has grown through the service as a consequence.

Senator Bingham: The President has asked us to make a study of the best means of applying aircraft to the national defense. Will you give us such information as you possess and any facts which will help us to advise the President on this question, of the betterment of aviation?

Major Milling: If we take the present air establishment, we find The Secretary of War has the Army and the Secretary of the Navy has the Navy, each of which has an Air Service, presently called the Army Air Service and the Navy Air Service. In the Army Air Service you have a division into two parts. One is the air service of the ground forces, which is an auxiliary to the troops, and the other observation, which is purely an auxiliary. Now, if we take and form a field army and send it into the field, that observation force cannot work unless it is protected. The troops are at the mercy of attack by another force which has combat aviation. So that in addition to observation is attached pursuit aviation to protect the ground forces and to protect this observation aviation in its work in getting information. Also attack aviation to assist the ground forces in moving forward and in attaining their object. That may vary and may be of any size, depending upon the importance of the mission. In connection with the fleet that goes to sea, since they can not call on additional forces as an army can, where the air forces are based on land, the fleet must carry with it, either in ships or in carriers combat aviation about which I spoke, and which I will call the navy air force in contradistinction to observation, which is the Air Service, this being an armed air force. So that, in so far as the Navy is concerned, pursuit, torpedo, bombing and observation aviation all go with the fleet. In other words, they can not draw on them after they go to sea, so they have to go along.

Now, those are purely an auxiliary, and nothing else. We also have under our present air establishment, on paper, but nonexistent, a force which is called the G.H.Q. Air Force, which is made up of combat aviation. This force, though it does not exist in this country, is nothing new. It exists in France today. It is the French aerial division. Now the Air Service, in connection with ground forces and in connection with the fleet, from the standpoint of national defense, has a value which is absolutely zero, in so far as protection for the country in the air is concerned through the air. The only protection you have got rests with the G.H.Q. Air Force, and that is the air force we have been discussing.

Since we are dealing with things as they are today, we have, as I say, three organizations with exactly the same mission. We have a mission for the Army, a mission for the Navy, and we have a mission for the Air Force, no matter what organization you put it under.

We have had a great deal of trouble in so far as organization is concerned. It is perfectly natural to think of organizing it as all basic military units are organized, that is, on the basis of an Infantry company. I am speaking of an airplane squadron. But we have a situation there where our enlisted men do not operate as do the enlisted men in Infantry. They are mechanics, and first of all mechanics must be with the plane, and must be kept on the plane from day to day. In the case of an Infantry organization, a man may be on military duty today, and on guard duty tomorrow, or he may be with the kitchen police next week. So that in the organization we should follow more nearly the Navy organization. In other words, we do not expect these men to do guard duty, nor to cook, but these men are expected to be mechanics at work on the planes.

We also have another problem in so far as the officer personnel is concerned. Take an officer with Infantry, or with a ground unit of any kind, and he is more a director and is not an actual fighter; he does not get out any more like in the old days and go into personal combat with the men in the opposing unit. He is the directing head.

With us a man has to fight. The man who is the leader of a unit is a leader of leaders of men. He must be really a man of higher caliber. I do not mean that he is a superman or anything of that kind, but his mental attitude in so far as commanding his unit is concerned must be somewhat different from where you are leading enlisted men who are fighting en masse.

As a consequence, so far as our training is concerned, we feel, particularly with this force, not so much with the ground forces, but first of all we have got to develop an air officer. If he is not an efficient air officer, if he is not good in the air, he may know everything in the world about an army, or about the work he is trying to do, and yet he can not accomplish his mission. First of all he must be a good air officer. Then he must be trained in cooperation with the branches he is going to work with. If he is going to work with the Army he must be trained in the tactics and technique of the Army sufficiently to carry out the mission in the air. If he is going to work with the Navy he must know naval tactics and technique.

Due to the cut in the Army, we realized that with the small force available all we could hope to do was to keep up, first of all, a training system. The first thing to organize, therefore, was schools.

So it was only possible to organize one group each of pursuit, attack and bombardment, and the necessary squadrons to work in the corps areas. However, the way these groups have been run, whereas we should have 80 officers in pursuit, they will have 12. Where in bombardment they should have 160, they have 10. And where in attack they should have had the same number, they had about five. So that you can easily see that in so far as tactical training is concerned you can not carry it on with any such organization. You can organize it on paper, and have four squadrons to make up pursuit, and on paper have a certain number of enlisted men. That compared with a battalion of infantry, four companies, would represent a well-organized unit. With us it does not mean anything, because the air officer is the fighting element, and if he is not there a thousand enlisted men on the ground would not help him, because the planes can not go in the air.

We can determine to a certain extent, during peace, what use we can make of these new weapons. In order to do that in our Air Service at McCook field we are working on the development of planes and the various accessories, such as bomb sights, and so on. At Aberdeen, Md., we are carrying out tests on bombs and guns of all kinds. At Langley Field, Va., we are trying to get down to the basic tactical principles of the employment of this materiel I just spoke of. In these flights that we carried out, such as the world flight, the flight across the continent from New York to San Diego, and so on, those were all done with a military object. Tests for speed and altitude and endurance will all have their uses in the next war.

In order to arrive at what can be done with an air force in warfare comparison has usually been made—instead of taking the force as a whole it is usually one single element as compared with some single element in the Army or the Navy.

For instance, you have heard it compared to a 16-inch gun, which is very powerful but which is in itself infinitesimal as a part of the armed defense of the country from the standpoint of national defense. You have heard it compared to the submarine, which is effective but a very small part of the Navy. Therefore we have to examine the state of this air force in comparison to the ground and naval forces and see what it consists of and what the various duties of its various branches are.

Now, in the Army we consider that the Infantry is the backbone of the Army. But you never see the Army operate with Infantry alone; it is always accompanied by the auxiliary forces. If the battleship is considered generally as the backbone of the fleet, as it seems to be, yet it always works with cruisers, destroyers and submarines. In the same way we do not think of the Army, as I say, operating alone, and to enable it to go along we have observation work in conjunction with pursuit. And it must be protected in the same way by the battleships.

In the same way in the employment of this air force, consisting of these units, bombardment is not sent out alone. It works in conjunction with pursuit. And attack, when it goes beyond the immediate front it works in conjunction with pursuit. In other words, it is a combination of the three units.

In so far as equipment is concerned the attack, pursuit, bombardment and observation each require planes of different characteristics in order to carry out their missions.

While the Army air force assigned to each field army can be reinforced if necessary, the strength of the Navy air force operating with the fleet is practically fixed by the treaty for the limitation of naval armament. This specifies that the total amount of tonnage allowed for aircraft carriers of 27,000 tons or more shall not exceed 135,000. However, it does not limit the construction of any number of ships for any purpose whatsoever, provided the tonnage of each does not exceed 10,000, so that any number of carriers of this size could be built. The experiments that have been conducted in flying off and on the deck of the Langley, a 13,000-ton aircraft carrier, has demonstrated that carriers of 10,000 tons would probably be useless for operations with the fleet, due to the difficulty in taking off and landing on the deck in a heavy sea, though suitable for transporting reserve planes. Consequently, the size of the air force that will normally be assigned to one, or to all of the battle fleets combined, will be limited by the number of the larger carriers of greater stability available. Its total strength will depend on the type and design of the aircraft carried, which is definitely fixed by the limited space available.

It is a policy of the Navy Department that the Naval Coast Defense Forces shall be kept at a minimum, so that everything that will add to the power of the fleet may be assigned to it. The most satisfactory course, and in fact the only successful course left open to the Navy in its relation to the new means will be for the fleet to occupy an advanced position and operate offensively against the enemy fleets. Any naval forces maintained for operations from shore bases merely hinder the fleet in accomplishing this. If we trace the rise of sea power from the Battle of Salamis, 480 B. C., to the Battle of Jutland, in 1916, we find that practically every sea battle, with the exception of local engagements or the destruction of commerce raiders, has taken place in the vicinity of principal seaports

or near the coasts. In other words, fleets have operated and fought not usually in the open sea, but just out of range of the land defenses. As the range of such defenses increased, the actions took place further at sea.

In order to provide the necessary defenses to relieve the Navy from any responsibility for the mere safety of the ports, nearly two billion dollars were spent on our fixed coast defenses during the 20 years following the Spanish-American War. This, however, did not relieve it of the responsibility of providing for the patrol of our coastwise sea lanes and the protection of coastwise shipping, and the Naval Coast Defense Forces still remained a necessity even though it resulted in curtailing the power and activity of the fleet. With the advent of air weapons, the necessity of maintaining these forces became less important and now ceased altogether in the case of those nations equipped with an adequate air force. Thus the last link binding the fleet to the shore has been cut, and the dream of a seagoing, offensive Navy has been realized.

The Navy, however, instead of seizing this advantage, continued to make provision for the increase of the Naval Coast Defense Forces by planning the establishment of land bases for aerial operations along the coast, paralleling those of the Army. This naturally resulted in their assuming some of the responsibilities with which the Army was definitely charged, and which the Army could more efficiently and economically carry out with its Air Service. Congress, realizing that the duplication of effort would only result in inefficiency, as well as involve the useless expenditure of large sums of money, enacted legislation in 1920 outlining the duties of Army and Navy aviation. If the provisions of the law of 1922 are complied with, the Navy will be limited to that aircraft which is capable of operating with the fleet at sea. There is little doubt but what it will be carried out completely in time of war, as all available naval Air Service will be needed for fleet operation, and such personnel and equipment as may be necessary will be withdrawn from land bases for that purpose even though it leaves them in a weakened condition. Thus it is essential that the Army Air Service be charged fully with this responsibility in time of peace and given the means to provide the Air Force necessary, if any measure of coast protection through it is to be attained in time of war.

It is well realized that if a Navy is to be of any use in National Defense, the fleets must be ready to operate on the outbreak of war. This is even more true of the air component if the statement by Adm. William A. Moffett, Chief of the Bureau of Aeronautics of the Navy Department, to the Naval Affairs Committee, House of Representatives, on April 8, 1924, is to be accepted as the basis on which the Naval Air Service can be expanded after the outbreak of war. He estimates that it takes about eight years to make an efficient naval pilot. Certainly, a reserve of pilots of this character can not be trained in time of peace, so that for several years after war begins the efficiency of the Naval Air Service will be measured by that available in time of peace.

A Navy, a "Balanced Navy," is still essential for the maintenance of supremacy on the high seas, but as the radius of action and efficiency of an Air Force operating from shore bases increase, the maintenance of sea supremacy through the fleet will become less and less.

While the General Board of the Navy still considers the battleship to be the capital ship of the future, nevertheless its preeminence is in dispute.

In future naval actions the successful issue will not depend, as it has in the past, principally upon the number, character and gun power of the surface and subsurface vessels composing the fleet, but will rest rather in the ability of the fleet air force to gain and maintain superiority in the air. If this is accomplished, full mobility of action will be afforded the fleet, accurate information of the strength and position of all elements of the enemy fleet will be obtained, and extreme gun range can be employed by utilizing aerial observation for the control of fire. In addition, Bombardment and Torpedo Aviation will provide an effective force for direct attacks on enemy vessels.

When the fleet proceeds to sea to engage the enemy fleet for the purpose of destroying it and thereby securing free passage of the seas to friendly vessels, the enemy, if inferior, will attempt to avoid battle by taking refuge in a strongly fortified harbor. Formerly, when this condition occurred, tedious and expensive land operations were necessary to force a fleet from such a position. Today, if the air force with the fleet is sufficiently strong, and is superior to the enemy, the enemy fleet can be attacked through the air, and it is then forced to venture forth to give battle or perish at anchor. If additional air forces are necessary to accomplish this purpose, and if a land base within aircraft cruising radius of the port in which the enemy fleet is sheltered can be established, a part or even the entire air force of the country can be transported on merchant vessels for the purpose. If the American besieging land forces at Santiago in 1898, or the Japanese besieging forces at Port Arthur in 1904, had possessed an adequate air force, the Spanish and Russian fleets occupying the harbors in question would have been forced to put to sea or would have been destroyed through the air.

The Chairman: You spoke of a new bomb sight, what it does. Is that now in operation on the planes that we have?

Major Milling: We have not a sufficient number to equip the whole group. I think there have been ten or twelve built, but there are a number under order at the present time.

Now the air force may be considered a true arm. It is capable of operating alone against air, land or sea forces. It can protect our coasts and frontiers, but it is able to operate over the sea or over the land with equal facility. It can protect our fleets when they are forced out by a superior enemy to take shelter in fortified harbors. When the necessity exists, it can be used as a general reserve to reinforce the action of field armies, or to assist battle fleets in overseas operations.

It is not held down to any one place—its base of operations may be shifted at will and its area of operations is limited only by the fuel capacity of the aircraft employed. It is the only force capable of making direct attacks upon the enemy's resources, industrial or otherwise, or of influencing the morale of a nation by making the population feel the brunt of war. While it cannot capture important cities nor occupy disputed territory, once the enemy air force is defeated or neutralized, not only cities, but the entire enemy country is laid open to aerial attack.

It is the policy of this country to maintain a small regular army in relation to the national army, to be mobilized in time of war, due to the fact that a superior enemy army can be delayed by advance forces, or a position can be taken behind natural defenses or in fortresses, and also to the fact that a large army moves slowly.

A navy, on the other hand, must be sufficiently strong to combat the strongest enemy fleet that can be brought against it, as an inferior fleet possesses little power to delay the advance of a superior enemy which can

approach from any direction in the sea area and can cover great distances in a single day.

In the case of the air force it must meet the enemy, not in a few days, but in a few hours. Its full striking power must be ready for instant use. If it is inferior to the enemy, no defensive positions exist behind which it can take shelter, and since the enemy can approach from any and all directions, it cannot be used to protect important centers, as this would necessitate dividing it up into small forces which could be easily defeated. If the Navy is defeated, some measure of protection remains to the country through the ground forces. If the air force is defeated, not only the ground means of defense but the entire country is laid open to aerial attack.

In colonial or guerilla warfare it has been thoroughly demonstrated by the British to be the most efficient means of controlling forces of that kind.

The question has been brought up as to why if this is the case the French have been unable to do anything with the Riffs. Fortunately, Captain Rodeville, of the French army, was here and told me that up to a month ago they had only sent over a squadron and a half composed of old wartime machines which were not properly equipped and in no shape to carry on war of any kind. They were purely observation planes. So that at the present time they have sent three more over, making four squadrons, and he thinks the last squadron has proper equipment. But under the situation, with equipment of that kind it is not to be expected that they could accomplish anything.

Major General Harbord: How much aviation have the Riffs?

Major Milling: None at all.

The power to concentrate the air force on either coast was demonstrated by the nonstop flight of 2,500 miles in 36 hours from New York to San Diego, Calif., made by Lieutenants John Macready and Oakley G. Kelly; by the dawn-to-dusk flight of Lieutenant Maughan. In other words, we know today that we have got planes that can do those things. We have not got them in sufficient numbers, nor organized to do it as a military unit, but if it can be done by one plane there is no reason why we cannot build them to do it with organized tactical units.

The tests on warships demonstrated that in so far as ships are concerned they were vulnerable targets. If you have a fleet in formation, the minute that the ship is disabled in the slightest or her speed is reduced to the point where she has to fall out of the formation, she can be counted out at that particular time. Instead of the bombing being inaccurate, the results obtained showed it to be far more accurate than any other method in existence for launching attacks with heavy projectiles.

In connection with the smoke screens we found in the Panama maneuvers that the smoke screens usually laid by destroyers for the protection of battle ships against fixed defenses merely hindered the fleet in its operation as a unit and did not make them invisible from the air. In fact, we took photographs, the ships showing up plainly through the smoke, which shows that so far as they are concerned they cannot screen themselves from attack through the air.

Insofar as overseas operations are concerned, in the future they will not be carried out as they have been in the past, that is, against countries equipped with the present means of defense. It will be impossible.

The Chairman: You have the view that other countries now have an air force of the kind you are describing?

Major Milling: The French have an air force which corresponds to this right now. The British have one which corresponds to the separate air force of this third chart I showed you.

It will be impossible for fleets accompanied only by marines and a fleet air force to establish an operating base on enemy waters against a nation with an organized air force.

General Patrick recommended the corps and General Mitchell the separate air force. We have, so far as a separate air force is concerned, the English, which I think has been discussed, and like everything else, you can get propaganda on both sides. They have moved out, have a separate budget for the Navy and worked that with naval officers. However, as I explained to you before, these are pure auxiliaries. They do not enter into the general question of your air force in so far as National Defense is concerned. Therefore that is not what you do with the Air Service of the Army or in so far as its organization and its work with the ground troops, that is, observation aviation are concerned; those will not affect the general principle of your air defense. It rests in this.

So it comes down to a question as to where this air force should go in order to make it most efficient from the standpoint of defense of the country.

We have heard that if this were made an air corps, as we have in this way, or if we went to a separate Air Service, as we have here, we would have three elements to contend with, where we can not get cooperation between two at the present time. At the present time we can not get cooperation. We have never had joint maneuvers without there being trouble as to who was going to command; that is, as soon as the Navy came into contact with shore there has always been trouble about that, who was going to command and who was not. The only way that could be settled certainly is by putting a head in command. That is regardless of what you do with this—leave it here. But in so far as the operations, so far as the national defense is concerned, there has got to be a head of these two if they are ever going to be coordinated.

It has been demonstrated practically, so far as maneuvers are concerned and actually in so far as legislation is concerned that you can not get teamwork, and the only way you are going to get teamwork is to put a boss up there.

The Chairman: You mean a head other than the President?

Major Milling: I mean leave the President as a head, but let him appoint a staff of his own, call it that, or somebody to coordinate the two.

I do not believe that you can get national defense, as I say, even as it stands today, leaving out the question of Air Service—the future commander in chief who is going to fight the successful war is going to be commander in chief of the armed force due to the mobility and change in warfare and the methods of applying warfare—your whole forces of the country, whether they are Army or Navy or Air forces, must be used in conjunction and in cooperation, and your next big general, your next big commander in chief of the armed forces due to the mobility and change in should have under him as commander in chief for your ground forces, as commander in chief for your air forces, and as commander in chief for your navy, all of these forces. Where it is a Navy problem he works primarily through the naval man on his staff, and if it is an air problem through the air force, and if it is a ground problem through the ground man.

But we see every day, since the advent of air forces where we are constantly coming in contact closer than we ever did before, that some coordinating head is necessary.

We have heard spoken about unity of command. General Harbord had marines under his command in France. He had no trouble. We got unity of command during the war and among the Allies by putting them under one general—he was a Frenchman—up until the time that we got one here, just as I am telling you, where he is necessary for the Army and Navy. Until you have one commander in chief you can not get anything done.

If we consider another feature, at the present moment, you might say, keep out the question of the air force, that is, consider this whole thing as the Army, the Army made up of the ground force with its component and of air forces. You have got then the Army and you have got the Navy. Up until the time that you have got them it has always been considered that your Navy was your first line of defense. With the advent of air forces in the case of a country that has an air force your Navy has ceased to be your first line of defense. England today considers her air force her first line of defense.

Now, going back to coast defense for a moment; we find that in England coast defenses are controlled by the army. The vessels, that is, patrol vessels and vessels operating there, are manned by the navy, but under the control of the army. England has this system of control over her coast defenses in the air. I do not believe in it. I think that coast defenses should stay under the Army.

Mr. Durand. Colonel Milling, was not the destroyer, on the whole, the most effective agency operating against the submarine in the war?

Major Milling. Yes, sir; I think that they were used primarily for that purpose, but I am not thoroughly familiar with the detail of it.

Mr. Durand: I was wondering whether, in your view, suppose in case we were in war and our coastal waters were infested with large numbers of enemy submarines, whether you could effectively furnish a defense from the air to that condition?

Major Milling: No, sir; it would be a combination of your air and your necessary coastal vessels. I do not mean that I would do away with the necessary vessels to patrol my coast line, but they ought to go under the command of your men who are responsible for your seacoast defense. It ought to be placed under the Army just as it is in England.

The Chairman: You said at the present time no air force would attack the Atlantic seaboard in your opinion until it had destroyed or eluded the fleet?

Major Willing: Yes, sir.

The Chairman: In the present condition of the air forces of other nations?

Major Milling: Yes, sir. In other words, it would be perfectly ridiculous for a fleet—suppose that the British fleet was stronger than our fleet and our fleet withdrew back in order to get support from our fixed defenses. Provided we had the air forces here, the minute this fleet came in to attack our fleet it immediately comes within range of our air force. It is then subjected to an attack both through the air and by our fleet, both at the same time.

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SECTION I

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SECRETARY DAVIS, THE MAN OF MANY SIDES, TAKES HOLD OF THE ARMY

BY JOHN CALLAN O'LAUGHLIN

"I am proud to be associated with the loyal, faithful and patriotic group of men which the Army embodies."—A greeting from Dwight F. Davis, Secretary of War, to the Army through the Army and Navy Journal.

HERE in Washington, where no man is a hero to any newspaper reporter, they're talking about Dwight Filley Davis, appointed Secretary of War by President Coolidge. Mr. Davis has been in the Capital long enough—four years—to have revealed himself as he actually is, and the revelation has come through no assertion of himself, but by the amiable contact of acquaintanceship. He is popular—the result of personal magnetism, of social charm, of wide range of interest in human activities, from sports to national and international problems, and, above all, of the friendly consideration which he displays in the affairs of the man or woman with whom he is talking at the moment. He has ability—the farmers of the country whose distress he helped to alleviate by wise financial relief—President Harding, who, when he resigned from the War Finance Corporation, thanked him for "your eminent services"—and his business administration of the War Department, both as Assistant Secretary and during the absence of the Secretary—are effective demonstrations of his high capacity. He has physical courage—the Distinguished Service Cross he wears, and the citations he received for bravery on the field of battle, "where poppies grow," establish his possession of this quality. He has moral courage—his refusal to pursue a life of ease which family wealth assured, and his deliberate entrance upon the hard grind of public service, his battles with the political gang which debauched the House of Delegates of St. Louis, his Municipal Welfare work, through which, in spite of heart-breaking obstacles, he accomplished the revolution of living and recreation conditions in the tenements of his native city, his abandonment of home and family for his country's defense—these constitute the evidence of his moral strength. He is politically fearless—his denunciation of pacifism in Wisconsin and his native State, where German sentiment disapproved preparedness, and his request of President Coolidge to appoint an independent Commission, such as Chairman Morrow and his associates form, to investigate the air controversy, leave no doubt of his willingness to express himself emphatically and to assume full responsibility for his words and deeds. He is politic—twelve members of the Missouri Congressional delegation testified to this trait in a signed letter to President Harding and any man who can get a dozen Missouri Congressmen together admittedly is entitled to diplomatic rank. And finally, he is loyal—the men he worked with in making St. Louis a better place in which to live, his comrades at the first Plattsburg camp, the men with whom he served in his regiment, the officers with whom he fought in France, and his friend and predecessor, Secretary Weeks—they say he understands what loyalty really is and means, and they know. To me, the keynote of Mr. Davis' character is found in his modesty and his simplicity. Naturally he appreciates the high honor which has been conferred upon him, but it is an appreciation inspired by a realization of the knowledge of service which has come to him. He wants and proposes by hard work to make good, to give the country the best there is in him, to administer the Army so that it shall be efficient, disciplined and sufficient for the duties it must discharge, and to so plan in preparedness that the country will be able to maintain peace. He is no saber rattler, no visionary with huge and expensive armaments to seek or plan, but a hard-headed American citizen, who wants merely a force of Regulars sufficient to protect our interest and uphold the Government, and to serve as the basis for instruction and expansion in case of trouble; who will encourage the development and efficiency of the National Guard, the Officers' Reserve Corps, the Citizens' Training



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The Gracious Mrs. Secretary

Camps Association, and other patriotic societies, and endeavor to bring about Selective Service so that the profit shall be taken out of war and the country as a unit shall face any nation that might attack us. In this connection, Mr. Davis repeatedly has made known his position.

"America has never been the aggressor in any war," he said. "America never will be the aggressor. Ours is a peace-loving people animated by the sole desire to maintain friendly relations with every country on earth. Our Army today is the smallest of the great powers. In the list of active armies, we rank forty-sixth. We have the fewest soldiers per capita, the smallest military tax per capita, and spend the smallest percentage of national wealth on military affairs. Our people are not a militaristic people. We covet no territory. We want the right peacefully to pursue our own affairs, and we recognize that others are entitled to the same right. We wish that the millenium, where wars can not be, were here. But because it is not here, because our security must be insured, because the best assurance of our peace lies in our preparation, we are determined to be prepared against unwarranted attack. Through the National Defense Act, the first step has been taken to prevent the waste which characterized our efforts to arm during the World War—a waste which cost the country the enormous sum of fifteen billions of dollars. Our next step should be the enactment of the Selective Service Law. When that is a statute, and the plans which it should authorize are perfected, we will have provided, as far as we can in time of peace, for the defense of all the people by the people. We learned from the World War that valor and skill in the field and ability to finance are not the only weapons of war. The nation prepared to mobilize industrially will be the nation which can the more calmly face battle and look for victory. Such preparation we must make.

"I am not one who favors a big Army. But I do insist what Army we have shall be efficient and economically administered. And that is what I shall strive to maintain."

I know of nothing which more adequately expresses the character of this man who has become Secretary of War than the following poem, by Will Thomas Withrow, which I found in his scrapbook:

A MAN'S PRAYER

Lord, if one boon alone be granted me,
Let me but choose what that one boon shall be;
I shall not ask to live 'mid sheltered bliss,
In soft security—but only this:

Let me be not a coward in the strife
That sweeps across the battlefields of life;
Let me leave not for other lives to bear,
The burdens that were rightfully my share.

Let me not whine, nor ever seek to shirk,
But cheerfully bear my full load of work,
Then place a friendly shoulder 'neath the load,
Of one, who, fainting, falls beside the road.

Let me, oh Lord, be clean and unafraid;
Let me go forth to meet life undismayed;
Until the final hour of life's brief span,
Let me walk upright—let me be A MAN!

Thus let me live; that when, the day's work's done,
I pitch my tent toward the setting sun,
Lie down to rest, and from my labors cease,
My soul within its house, shall be at peace!

(Continued on page 147)

Orville Wright Calls Alleged Army And Navy Air Stunts Useful—See Section II of This Issue

AS THE COUNTRY SEES OUR SERVICE PROBLEMS

EDITORS APPROVE PRESIDENT'S OMAHA VIEWS ON NATIONAL DEFENSE

FROM the point of view of President Coolidge, the reaction of the Country to the speech which he delivered before the American Legion at Omaha leaves nothing to be desired. The South joins the North in a chorus of approval, and the East and West swell its volume. Newspapers as far apart as the *Christian Science Monitor*, of Boston (Independent), and the Grand Forks, N. Dak., *Herald* (Republican) agree in pointing specially to the spiritualistic character of the Presidential address. The *New York World* (Democratic), lauding the President, states that "coming from the average man at such a time the speech was extraordinary; coming from Mr. Coolidge, it is well nigh incredible." The Sioux Falls, S. Dak., *Press* (Republican) captions its editorial, "Coolidge Talks Sense." The Milwaukee *Sentinel* (Independent) declares:

"The President's popularity is bound to increase by his calm, straightforward discussion of the subjects he touched upon, his attitude towards peace and militarism, his clear-cut statement on the equal responsibility of every citizen in war time, and especially by his temperate but firm discussion of racial antagonisms."

Therefore, not only because the President said the things he did say, but because of the enthusiastic commendation of his pronouncements, the Omaha address becomes of vital interest to the Services. The three matters he discussed which particularly affect the Army and the Navy and upon which editorial opinion especially has been expressed were preparedness, the subordination of the military to the civil power and propaganda laid at the door of the former, and a permanent conscriptive service law.

So far as preparedness is concerned, the *Washington Star* (Independent) asserts: "The country will approve also the President's declaration that he is a believer in a policy of adequate military preparation. He characterizes the military profession as an 'honorable and patriotic calling of the highest rank.'" The Grand Forks *Herald* sees "no note of pacifism" in the address, but rather a "recognition of the facts of the world in which we live, and of the importance of guarding adequately against public dangers. The military power of the nation must be maintained as a matter of common prudence." The Buffalo *News* (Independent) is less optimistic in its view, for it holds that the President offered "no comfort to those who seek to enlarge the Army and Navy"; and its opinion is shared by the *Boston Transcript* (Independent) which finds in the President's utterances a determination "to check military expenditure at the point where it now stands, and to divert the millions to be saved from larger armaments to the uses of peace." The *Rocky Mountain News*, Denver (Independent), also sees no intention on the part of the President to enlarge the Services. "The time was ripe," it says, "for such pronouncement. Not that he is opposed to appropriations, and to the very best that can be got in arms for offense and defense, but he is not one to make forever a guide of great armaments." The *Chicago Tribune* (Republican) takes advantage of the President's speech to make an earnest plea for adequate appropriations. It says:

"Our plain duty with respect to national defense is to induce adequate expenditure, just as one keeps up insurance year in and year out. While it is well to strive for the demobilization of racial antagonisms, fears, hatreds and suspicions, and to try to create an attitude of toleration in the public mind of the peoples of the earth, that is, we submit, a long job, and in the meantime, though we do not maintain a huge armament as a sword hanging over other nations, we want what sword we have, small though it is, to be always sharp and ready for our defense."

The *Skyline*, a publication of the New York Board of Trade and Transportation, goes even farther than the *Tribune*. While praising the economy policy of the administration, it declares:

"Cutting down the personnel, commissioned or enlisted, or both, of our already skeletonized Army would make it practically impossible for the War Department to 'carry on' under the National Defense Act, which is the first real military policy this country has ever been blessed with. Cutting down the size of the Regular Army would be a death blow to the Organized Reserves, which are just finding their 'sea legs'; it would seriously retard the growth and improvement in efficiency of the National Guard and it would strike right at the heart of our R.O.T.C. and C.M.T.C. system."

"Reducing the number of officers and men in the Navy would be criminal. The Limitation of Armament Treaty provided for a certain standard as to the number and size of ships of England, Japan and this country. The material question is, therefore, more or less fixed, thus making the personnel question of far greater importance today than at any other time in our history. Already our commissioned personnel is less than England's, which it should equal, and, furthermore, it is less than Japan's, which it should exceed as five exceeds three. Why be so foolhardy as to destroy the only favorable thing we obtained by the Limitation of Armament Treaty—namely, theoretical naval equality with England?"

There is no doubt the President struck a responsive chord in the matter of the subordination of the military to the civil power. The *New York Times* (Democratic), after pointing out that the President is for intelligent preparedness and for adequate national defense, observes: "Nor did the President, as if with an eye to some present controversies, fail to exalt civil authority over military power. This is our great protection against militarism. On this point, the President used words which are edged with peculiar significance." Of the

same tenor is the view of the *Providence Journal* (Republican), which states: "What the President has to say about dictation by the military power to the civil power is trenchant. This is only another illustration of Mr. Coolidge's willingness to use strong language when he feels it is necessary. He believes that in a democracy the civil power is and must remain supreme, and he is, of course, fundamentally right." The *Brooklyn Eagle* (Independent) asserts that the whole question in the President's judgment is whether a stronger and better military force would make a better country. "He favors a moderate course," it finds, "and makes the important point that regardless of the size of our Army and Navy, we are governed by public opinion, and the civil authority is supreme. There are members of the body the President was addressing who should take this warning to heart." The *Washington Daily News* (Independent) believes the President "was hitting at those responsible for the tempest now ravishing the entire military establishments of the country—the blasts and counterblasts flying back and forth between Army, Navy and Aviation, to the utter demoralization of all three services, whatever the ultimate effect may be on public opinion." The Greenville, S. C., *News* (Democratic) suggests that while the President may have meant no reference to Colonel Mitchell, "his expressions might be interpreted as a suggestion that the Legion give thought and deliberate consideration before putting itself on record as to its official view of proposed military changes." The *Galveston News* (Democratic) goes farther than the Greenville paper, for it says that "whatever may have been in Mr. Coolidge's mind when he penned those words, they will be construed as a disparagement of Colonel Mitchell since he is for the moment the best known type of publicity wielding man."

The *St. Louis Globe-Democrat* (Independent), and the *Des Moines Register* (Independent) are alike in their interpretation of the President's remarks. "His address," says the St. Louis paper, "was a stern rebuke to the military spirit that would seek national prominence through military power. . . . Our military power should be in accord with our purposes of peace, our equipment sufficient for our safety under any likely emergency, but of no greater force than is demanded by reasonable prudence; and it should at all times be dominated by civilian authority." The *Register* regards it as apparently obvious that the President is out of patience with the organized propagandists to set up the military itself as the supreme and sole judge of what the country's policy of expenditure for armaments should be." The *Cincinnati Enquirer* (Independent) speaks in the same vein. "His unveiled reference," it says, "to the dangers that may result from men in the military service bent on inflaming the public mind for the purpose of forcing Government action through the pressure of public opinion will meet with general public approval."

The President's plan to take the profit out of war by the enactment of a sound selective service act meets with hearty editorial support. The *New York Evening Post* regards it as foreshadowing "a most significant phase of the future military policy of America." This paper continues:

"There is a determination in this country that when and if America again mobilizes for war there shall be a mobilization, not only of men, but of money, manufacturing, power, materials, food and all resources. Production would be regulated. Distribution would be controlled. As in 1917 rails and ships would be taken over. Labor would be under the direction of the Government, and this would lead to wage regulation. . . . This would mean the taking of profit out of war."

Other papers endorse the view of the *Post*. But a chill is given in the reception accorded by various labor papers and some of the farm journals. It is apparent that it will not be easy for the President to get through Congress a law which adequately will express his convictions in this respect.

NEW ADVERTISING EXECUTIVE FOR ARMY AND NAVY JOURNAL

The ARMY AND NAVY JOURNAL has pleasure in announcing that Mr. Forrest H. Riordan, one of the ablest and foremost advertising men in America, has become the Advertising Manager for the paper. The ARMY AND NAVY JOURNAL feels that it is fortunate in having made this connection with Mr. Riordan. Although a young man, Mr. Riordan has made a name for himself in the advertising and newspaper fraternities. He began his advertising career on the *Washington Evening Star*. After a satisfactory experience with that paper, he went to Philadelphia, where he became associated with the *Evening Bulletin* and subsequently the *Public Ledger* and *Philadelphia North American*. He returned to Washington and served as Assistant Advertising Manager of the *Washington Post*. Mr. Riordan has an extremely pleasing personality, and has a marked penchant for taking the initiative. He is a thirty-second degree Scottish Rite Mason, a member of Almas Temple of Washington, as also of the Pennsylvania Society, the Society of Natives, Washington, and of the City Club of Philadelphia. He assumes his new duties October 19.

FEEDING THE DOVE



Chicago Daily Tribune.

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SECRETARY DAVIS BOTH SPORTSMAN AND SUPPORTER OF ARTS

(Continued from first page)

If Mr. Davis were asked what incident in his career gave him the keenest satisfaction, he would probably respond, "My promotion to a corporality at Plattsburg." If those who know his love of sports were to reply, they would say the first time he won the tennis championship in doubles. But to those who have known him from boyhood, their answer would be the time he fought the "gang" in St. Louis to a standstill for the benefit of the children of the city. At the time—1907—Mr. Davis was a member of the House of Delegates, to which reference has been made. He had had a background of experience for the welfare work in which his heart was interested. At the age of 24 he was named Chairman of the Public Baths Commission of St. Louis. In that office he had established community centers in each tenement district, and there the children gathered, and, with their parents, were taught personal cleanliness, and tactfully instructed in the principles of American citizenship. His work was broadened by his transfer to the Public Recreation Commission. Thus, when, as a member of the House of Delegates, he sought to secure the passage of a measure authorizing the establishment of a park in the center of the downtown districts, he was able to present from personal knowledge the need and value to the city. But what he said appealed only to the populace and had little influence upon the gang in control of the House. Mr. Davis could depend upon thirteen Republican votes, and needed two more to secure the requisite majority for the passage of his measure. Only from the gang itself could he hope for recruits. He induced the member, in whose district the park was to be located, to agree to back the bill. He got another into a corner, plead with him to give his children and his neighbors' children a chance to breathe fresh air and to play free from danger. Finally this member said: "I'll support you, but I don't know what the gang will do to me." The day for the vote came. The gangsters, to prevent the vote, walked out of the chamber. Mr. Davis got hold of the Secretary of the House. He made a plea for the children, which caused that official to remain, to lock the doors and not to answer the telephone. With the outwitted members hammering at the door, Mr. Davis brought his measure to a vote, and with the support of the two recruits he had won, brought about its enactment. It is interesting to know that two of the members of the locked-out majority were subsequently indicted for bribery.

This, then, is Davis, a man of resource and decision. And his superb health gives him the physical vigor to support the drafts which his brain makes. Only 47 years of age, 6 feet in height, 185 pounds in weight, Mr. Davis has the stamina to discharge the great responsibilities which the President has placed upon his shoulders. There is no American sport which he has not played. He is a baseball enthusiast. He is deeply interested in football. He is fond of polo. He describes himself as a poor exponent of golf, but those who play with him speak respectfully of the way he handles his clubs. As tennis champion his name is known throughout the world, both for his own performance on the court and for the Davis Cup, which, offered in 1900 in international competition, has drawn into rivalry every nation wherein tennis is played. In his time, Mr. Davis was regarded as exceptionally fast, and his height, reach and speed permitted him to cover the court to the fullest extent. He makes it a point to keep in condition, and is interested in keeping others in condition. He has been President of the United States Tennis Association, and has promoted matches between the Army and the Navy. He is doing everything he can to popularize polo, and has lent his personal and official backing to Army activities of this kind. "I believe," said the Secretary, "that it is the duty of every man to keep fit. One can not work properly without sufficient exercise."

WILL SEE SERVICE IS PREPARED

Here is a warning that every officer and man in the Army would do well to heed. The new Secretary will see to it that the Service is always ready, both physically and mentally, to perform any tasks assigned to it, whether they be of peace or war.

It is natural that his physical condition should make the Secretary alert, direct and clear of eye. He is the youngest member of the Cabinet. His hair is dark brown, streaked with grey. His eyes, also, are brown. He has a prominent nose and a firm mouth and chin. When he speaks, it is with promptness and decision. There is no doubt how and what he feels when he finishes his remarks.

The Secretary is a man of many sides. He is a devoted supporter of art, and his taste is such as to class him among connoisseurs. Hanging in his office is an etching by Whistler, and a striking Van Dyke. His favorite among the great men of the past is Abraham Lincoln, and it is his pleasure to work under the benign countenance of that saviour of the Republic.

The Secretary is fortunate in having for wife a lady of great beauty, dignity and charm. Mrs. Davis was born in Boston, and it was while her husband was studying at Harvard that she first met him. Their marriage has been blessed by four children. They are all proud of Father, and they are watching his career with the interest which love alone inspires. Mrs. Davis is a delightful hostess, and her tact has made for her husband and herself a pleasant niche in the social circle of the Capital.

It is not too much to say that the Service is to be congratulated upon having Mr. Davis as its chief. His experience means familiarity with Army problems. He will require strict attention to duty, harmonious cooperation and active development. And there is no doubt that this requirement will be met in the same spirit of loyalty and affection which Mr. Davis himself will extend to the Army.

N. R. A. ENTERS SUIT AGAINST FORMER SECRETARY PHILLIPS.

The National Rifle Association of America, whose office is in Washington, D. C., filed suit on October 15, 1925, in equity court against Col. Fred H. Phillips, Jr., its former secretary, for an accounting and explanation as to his conduct of the affairs of the association.

According to the bill, the former secretary engaged in propaganda work in direct violation of the policies of the association and used the funds and employees of the association for his personal gain. It is alleged Colonel Phillips has refused the demand for the surrender of the books and records and an accounting. Attorneys Bryan, Pine and Easby-Smith appeared for the association.

MACMILLAN EXPEDITION WELCOMED HOME.—With the arrival of the Arctic exploring steamers Bowdoin and Peary of the MacMillan-Navy expedition at Monhegan Island, Me., October 9, from Etah, Greenland, Secretary of the Navy Wilbur promptly sent his congratulations.

TRAINING SCHEDULE FOR REGULAR ARMY AND COMPONENTS FOR 1926.—The War Department has issued its training directive for the calendar year of 1926 for the Regular Army, the National Guard, Organized Reserves, Reserve Officers' Training Corps and Citizens' Military Training Camps.

Regular Army

For the Regular Army, commanders of all higher echelons are charged with simplifying the work of the Regular Army in its training duties. They will guard against overemphasis of any one training mission at the expense of others, and they must guard against the assignment of excessive numbers of Regular officers as training camp over head and instructors. The Summer training camp period devoted exclusively by any unit to the training of other components will not exceed two months, and the remainder of the year will be utilized for Regular Army training. Among other instructions, it is directed that mass athletics, group games and interorganizational competitions should be encouraged.

National Guard

For the National Guard, training will be conducted in accordance with the instructions for the Training Years 1925 and 1926. Training for the Organized Reserves will be conducted as heretofore, in accordance with A. R. 135-10 and A. R. 140-5. Unit training on active duty status will be conducted during the Spring and Summer months. Individual training on active duty status may be conducted at any time throughout the year.

R.O.T.C. and C.M.T.C.

For the Reserve Officers' Training Corps, training programs will be issued from the War Department about January 1, 1926. For the Citizens' Military Training Camps training programs will be issued from the War Department about January 1, 1926.

Funds and Training

Funds for the preparation and maintenance of camp sites for training the various components will be allocated to Corps Area Commanders before the end of the calendar year 1925. No additional apportionment of funds for 15 days' training for the third and fourth quarters of the fiscal year 1926 will be made available. The instructions issued further provided that at least 75 per cent of Reserve officers called to active duty will be given unit training (regiment, battalion or company). The number of noncombatant Reserve officers called to active duty will be held to a low percentage of total number trained.

The period of training for R.O.T.C. graduates, commissioned in the Summer of 1926 in the Air Service, Organized Reserves, and selected for instruction at the Air Service Primary Flying School, will be six months instead of four. Reserve officers may be utilized as instructors at C.M.T. Camps in numbers up to one per one hundred C.M.T.C. students, provided that the total quota of officers, both Regular Army and Reserve Corps, with organizations shall not exceed war strength.

The movement of Regular troops to establish or conduct camps will be reduced to a minimum. Trainees normally will be sent to the nearest camps, so as to reduce the cost of mileage and transportation. Corps Area Commanders will designate camp commanders by January, 1926.

FILLING OF AIR SERVICE VACANCIES CAUSES DISPUTE.—That the

200 vacancies in the Air Service should be filled by young officers who go through the basic flying training from the ground up, and not in accordance with the usual War Department policy of detail, is strongly advocated by Maj. Gen. Mason M. Patrick, Chief of the Army Air Service. Both General Patrick and Maj. Gen. Hugh A. Drum, Assistant Chief of Staff, who hold conflicting views on this question, give excellent reasons for their arguments.

MITCHELL FACES COURT NEXT WEEK.—Announcement will be made by

the War Department immediately that Colonel William Mitchell will be court-martialed on the charge "conduct unbecoming an officer and a gentleman." The specifications of the charge will be made public later, as will the personnel of the court to try him.

FIRST CAV. BRIGADE MANEUVERS IN VICINITY OF FORT CLARK.

The 1st Cavalry, stationed at Marfa, Texas, started overland for Fort Clark where they will take part in the 1925 maneuvers of the 1st Cavalry Brigade, which will be held this year in the vicinity of the old frontier post. It is expected that the Marfa command will arrive about October 17 and go into camp in the beautiful Las Moras Park, an adjunct of Fort Clark. The troops at Fort Clark have prepared a program of sports and games for the visitors during their off hours. The return to Marfa will be by marching and will commence on or about November 2.

Brig. Gen. E. B. Winans on October 19 and 20 will hold a formal training inspection of the entire brigade. This will include a review, inspection of full field equipment, and a training inspection of all units. In the afternoon of the 20th and October 21 a two-sided maneuver between the 1st and the 5th Cavalry, with portions of the 1st Machine Gun Squadron attached to each, will take place. October 22 and 23 will see the brigade engaged in a field exercise consisting of a camp for the night; attack on represented enemy position, and combat firing.

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Section II—Orville Wright Forecasts Aircraft Expansion.

THE MORROW AIRCRAFT COMMISSION finishes its taking of testimony this week. It has thoroughly investigated every phase of aircraft development, operation, and industry. It has thrown the door wide open to those it has examined and placed no restrictions upon the evidence offered by any of the numerous witnesses it has heard. There has been no secret meeting with anyone. The country, through brief accounts in the daily press and the verbatim reports in the ARMY AND NAVY JOURNAL, is as familiar with the testimony as is the Commission. That testimony is more complete in all probability than any taken by a similar commission. No witness was cut off. The patient attitude of the Commission in this respect was shown by the expression used by Chairman Morrow to Colonel Mitchell when the latter faced him with a huge bulk of data. "Put everything in," he directed; and throughout the hearings "Put everything in" was the slogan of the Commission. Thus the Commission, as a result of its thoroughness and wise policy of publicity, has won the approval of the entire country, and assured for itself public confidence in the soundness of the recommendations it will make.

To Mr. Morrow and his associates the ARMY AND NAVY JOURNAL extends its sincere congratulations and its acknowledgment of the fairness and exhaustive character of the work they have so ably done. The Commission is expected to devote a month to the study of the testimony. Its report then will be submitted to the President, and there is every reason to believe that the same sanity and judgment which have marked the Commission's course will guide it in the conclusions it will submit.

ARMY FLYER SETS NEW RECORD WINNING PULITZER RACE.—Lt. Cyrus Bettis, U.S.A., set a new world's speed mark of 248.99 miles per hour at Mitchel Field, L. I., on October 12 to win the Pulitzer Trophy Race, feature of the air meet. Lt. Alford J. Williams, U.S.N., came in second with an average speed of 241.71 miles per hour. He set the previous world record of 243.67 miles per hour in the Pulitzer Race in 1923.



Lieut. Bettis

Capt. Harvey W. Cook, U.S.A., came in third, Lts. L. H. Dawson, U.S.A., and H. J. Norton, U.S.A., fourth and fifth respectively. Lt. George T. Cuddihy, U.S.N., the other Navy entry was forced down during the race.

Lieutenant Williams' speed for the first lap of the 200 kilometer (124.28 mile) course was reported at 243.69 miles an hour, a fraction of a second faster than the best previous Pulitzer time. Lieutenant Bettis' plane shot past the "home" pylon soon afterward, and his time was given out as 247.81 miles an hour. Lieutenant Williams' second lap showed a decreased speed, being 242.89, while Lieutenant Bettis continued to gain, making 248.62.

At the end of the third lap it was obviously Lieutenant Bettis' race. Lieutenant Williams' speed going down to 242.39 miles per hour, while Lieutenant Bettis' speed increased to 248.66.

THE RESIGNATION OF SECRETARY OF WAR WEEKS.—President Coolidge, in accepting the resignation of Mr. John W. Weeks, Secretary of War, as a Member of his Cabinet, on October 12, 1925, on account of ill health, paid him a fine and memorable tribute. The letter from Mr. Coolidge follows:

"THE WHITE HOUSE,
WASHINGTON, October 13, 1925.

"MY DEAR MR. SECRETARY: Your favor notifying me of your final determination to resign as Secretary of War on account of your health has been received with a great deal of regret. I am pleased to know, however, that your physical condition is growing more hopeful each day and that with a relief from official duties there is prospect of a good recovery.

"I recall that you were entering public life 21 years ago, when you came to Northampton to speak during your first campaign for election to Congress. You have had the distinction of serving your home city, being a member of the National House and Senate, and sitting in the Cabinet under two administrations. Perhaps no more valuable suggestion was made to the Congress during the war than the proposal you made for preparing for peace.

"It will remain with the law for national forests, which bears your name, as a tribute to your statesmanship. I can not dispute that this entitles you to feel that you have given all that could be required of you in looking after the welfare of your country. I value your ability so much, and appreciate so highly the familiarity that your long experience in Washington has given you with the affairs of Government, that I feel your retirement to be a distinct loss.

"My personal relations with you have been such that I feel that the country is losing a valuable public administrator and I am losing intimate contact with a friend. Your wise conduct of the office of Secretary of War has been a great satisfaction to me, and in the well-earned leisure that private life will afford you I trust you will fully regain your strength and find time to continue your interest in the wellbeing of our country. The administration of your office has been such that you will go down in history as a great Secretary of War.

"In accepting your resignation, I extend to you every good wish for your continuing welfare. Very cordially yours,

"CALVIN COOLIDGE."

Mr. Dwight F. Davis, Assistant Secretary of War, was formally sworn in as Secretary of War on October 14, by Chief Justice William Howard Taft.

MARINE CORPS EMBLEM REDESIGNED.—Under the supervision of Brig. Gen. Charles L. McCawley, U.S.M.C., Staff Sgt. Joseph A. Burnett, U.S.M.C., after more than a year of research work, has redesigned the emblem for the Marine Corps, approval of which has been given by Maj. Gen. John A. Lejeune, Commandant of the Marine Corps.



New Design

The new design embodies the traditional features of the various devices which have been prescribed in the Marine Corps since 1868. The eagle, which is a natural reproduction of the American bald eagle, stands in a characteristic attitude and holds in its beak a ribbon containing the Marine Corps motto "Semper Fidelis." The hemisphere on which the eagle stands bears in outline the continents of North and South America and is crossed with lines of latitude and longitude which terminate at the continent. The hemisphere is intersected by a foul anchor, the ring to which the rope is attached being folded over on the stock.

Blue prints of the standard basic emblem may be obtained by applying to the Quartermaster, Headquarters, U. S. Marine Corps, Washington, D. C.

NEW GENERAL OFFICERS IN U. S. ARMY.—One brigadier general of the Regular Army was advanced to major general this week, and one colonel of Infantry was advanced to brigadier general. One brigadier general will be advanced to major general next week, and one colonel of Field Artillery will be advanced to brigadier general. All these officers have rendered distinguished services on the battle line, and pending the next session of Congress they will be given recess commissions. The following are the names of the officers concerned, with brief records of their services:

Maj. Gen. Benjamin A. Poore, U.S.A., who was advanced to that rank on October 11, 1925, from brigadier general by the retirement of General Duncan, rendered exceptionally distinguished and heroic service during the World War.

At that time as a brigadier general he commanded the 7th Infantry Brigade of the 4th Division in the Aisne-Marne, St. Mihiel and Meuse-Argonne offensives and in the Vesle and Toulle defenses. General Poore was awarded the Distinguished Service Cross and the Distinguished Service Medal by our Government, the Legion of Honor (officer) and the Croix de Guerre with Palm by France; and the Crose di Guerra al Merito by Italy. The citation of the Distinguished Service Cross follows:

"Benjamin A. Poore, brigadier general, 7th Infantry Brigade. For repeated acts of extraordinary heroism at Bois de Septsarges, France, on September 27, and at Bois-du-Fays, France, October 11, 1918. At Bois de Septsarges on September 27, General Poore personally reformed his disorganized troops, who were falling back through lack of command and severe casualties. Under heavy fire, he led them to the lines and presented an unbroken front to the enemy. Again, on October 11, in the region of Bois-du-Fays, he gathered together troops who were taking refuge from hostile fire, and turned them over to the support commander."



Maj. Gen. Poore

Brig. Gen. Fox Conner, U.S.A., at present on duty as Assistant Chief of Staff, G-4, Washington, becomes a major general on October 20, 1925, to fill the vacancy caused by the retirement of Maj. Gen. William H. Johnston, U.S.A., for age on October 19.

General Conner was born in Mississippi November 2, 1874, and is a graduate of the U.S.M.A., class of 1898, when he was assigned to the Artillery arm.

General Conner accompanied General Pershing to France and became the Assistant Chief of Staff in charge of the Operations Section at G.H.Q., A.E.F. He received the following citation for the Distinguished Service Medal:

Awarded Distinguished Service Medal: "For exceptionally meritorious and distinguished services. As Assistant Chief of Staff in charge of the Operations Section, he has shown a masterful conception of all the tactical situations which have confronted the American Forces in Europe. By his high professional attainments and sound military judgment he has handled with marked skill the many details of the complex problems of organization."

Brig. Gen. Michael J. Lenihan, U.S.A., an officer of distinguished service, who was appointed to that rank on October 11, 1925, from colonel of Infantry, was born in Massachusetts May 2, 1865, and is a graduate of the U.S.M.A., class of 1883, when he was assigned to the Infantry.

During the World War General Lenihan was a temporary brigadier general. He commanded the 83rd and 153rd Infantry Brigades, serving in the campaigns of Luneville, St. Clermont, Baccarat, Champagne, Ourcq River, St. Mihiel, and the Meuse-Argonne. For three years since the World War Colonel Lenihan has served as an instructor at the Naval War College, and was last on duty in New York city with the Organized Reserves as chief of staff of the 7th Army Corps.



Brig. Gen. Lenihan

Col. Lucius R. Holbrook, Field Artillery, U.S.A., who will be appointed a brigadier general on October 20, 1925, by the advancement of General Conner, has a distinguished record of service. He was born in Wisconsin April 30, 1875, and was graduated from the U.S.M.A., class of 1892, when he was assigned to the Cavalry.



Col. Holbrook

During the World War Colonel Holbrook was appointed a temporary brigadier general. The valuable nature of his services are shown by the following citation for the Distinguished Service Medal:

"For exceptionally meritorious and distinguished services. As commander of six battalions of Field Artillery at Cantigny and of the 1st Field Artillery Brigade at Soissons, he, with great distinction, directed the Artillery support of the 1st Division in the attacks on Cantigny and the Soissons salient. His careful judgment and high military attainments were shown in the accuracy and timeliness of the fire from the batteries under his direction, which, despite the difficulties involved, contributed materially to the success of the operations."

CONTROVERSY INVOLVING ARMY PUBLICITY LOOMS.—Freedom of speech in the Service and the prospect of a controversy arising involving the entire question of Army publicity loomed this week, when Brig. Gen. Joseph C. Castner, commanding officer at Fort Bliss, Texas, ordered Lt. William S. Barrett, C.W.S., to cease his publicity activities in making contacts with the local papers at this post.

In commenting upon the situation, Maj. Gen. Amos A. Fries, Chief of Chemical Warfare Service, declared that "instructions were merely forwarded to Lieutenant Barrett to the effect that correct information concerning the Chemical Warfare Service be disseminated throughout the country. It is all right for us to send it out, but what is to be published by a Chemical Warfare Service officer under the command of another officer is the commanding officer's concern. General Castner acted within his province and we consider the whole affair a closed incident." Publication of the article has been withheld by General Castner until approved by Maj. Gen. Ernest Hinds, corps area commander.

Inquiry made at the War Department disclosed the fact that Maj. Gen. John L. Hines, Chief of Staff, is not considering taking any action in the matter.

COLONEL MACNIDER APPOINTED ASSISTANT SECRETARY OF WAR.—Col. Hanford MacNider, former commander-in-chief of the American Legion, who has been appointed Assistant Secretary in succession to Dwight F. Davis, promoted Secretary, was born in Mason City, Iowa, October 2, 1889, and had the united support of all of the various organizations of veterans for the post. Colonel MacNider possesses the distinguished service cross, awarded for gallantry in France, and other decorations from allied governments.

SPECIAL SERVICE NEWS, COMMENT AND GOSSIP

BUDGET HEARINGS BEFORE GENERAL LORD.—Officers of the several bureaus of the Army have been appearing all week before General Lord justifying the estimates for their needs for the next fiscal year which were transmitted by the War Department. Secretary Wilbur and his bureau chiefs likewise have begun the presentation of the Navy estimates.

The presentation made by the Army chiefs was most orderly and demonstrated a thorough study of the Army requirements. It appears that a committee of the General Staff first held hearings covering six weeks. This committee made its report to a higher committee of which Maj. Gen. Dennis Nolan, Deputy Chief of Staff, was chairman. The latter body reported to Major General Hines and the then Acting Secretary of War, Mr. Davis. General Hines and Mr. Davis very carefully considered the tentative estimates and finally transmitted their conclusions as "preliminary" to General Lord. The latter after the hearings is expected to inform the department of the limit he fixes for the next fiscal year. These will be carefully considered by the department, passing through precisely the same channels as the original estimates.

General Lord is understood to be impressed with the methods followed in preparing the estimates.

DEPARTMENT HEADS RESENT SIMS' STRICTURES.—Rear Adm. W. S. Sims, retired, appeared this week before the Morrow Aircraft Board. The strictures he passed upon naval administration provoked a great deal of comment and not a little bitterness. Secretary Wilbur has the greatest confidence in the officers associated with him, and will not make any changes. While admitting the great value of the War College in connection with command instruction and proposing to foster and develop that institution in every possible way, it is insisted that the records of officers detailed to command the fleets and detached squadrons as well as those of officers who are chiefs of divisions in the department have justified their selection. The department contends that no detail to an important position is made without the greatest care, and it has no present purpose to alter the system which, it holds, has been generally advantageous in its results.

REGULARS AND RESERVES UNITE IN NEW WAR GAME.—A new war game played jointly by Regular and Reserve officers in the crowded streets of San Francisco a few days ago was attended with great success, besides being a unique enterprise of its kind. The game demonstrated new possibilities for aircraft.

An automobile with a white cross on its top, driven by what appeared to be a hit-and-run driver attempting to escape from his victim, sped through the streets of San Francisco, Calif. The machine attracted considerable attention in its flight which ended in a traffic jam at Post and Van Ness Avenue, where it was spotted from an altitude of 1,320 feet by Maj. Edward Howard, U.S.A., of the 316th Observation Squadron, Organized Reserves, from Crissy Field.

This comprised the new war game being played by the squadron. San Francisco was an enemy city. The automobile was the enemy's staff car. To find the car at a height of not less than 1,500 feet and trace its movements was the work of the men in the planes.

Four minutes after the squadron took the air at Crissy Field, the car had been located, its position noted, and in 20 minutes every plane in the squadron had spotted and was observing its movements.

Pilots of planes in this maneuver included Captain Eaton, Lt. D. C. Warren, Lt. W. J. Ligon, Lt. J. E. Durham and Lt. E. L. Yuravich. Observers were Major Howard, Lt. E. E. Eddy and Lt. C. G. Potter, and Sgt. A. V. Spaulding, all of the Organized Reserves. They came from many walks of life and include in their number a dentist, a physician, an automobile dealer and a lawyer.

PROPERTY LOST THROUGH DESERTION.—Efforts are being made by the War Department to reduce the loss of property due to desertion, which amounted to many thousands of dollars. Many surveys, the War Department points out, cover the loss of the full allowance of blankets and other articles of bedding. Manifestly, a soldier will not ordinarily advertise his intention to desert by stripping his bunk of every article except the mattress. The quantity and size of the articles enumerated in many cases preclude the possibility of the soldier taking them away with him at the time of desertion, other than with the use of a vehicle. It is believed, therefore, that 90 per cent of the property now shown on surveys as having been carried away by deserters is stolen from the deserter's bunk after desertion.

"A possible solution of the difficulty," according to the Chief of Finance, "might be to require a commissioned officer of the organization to check the effects of a deserter as soon as the latter is reported A.W.O.L. and to furnish a certified list, in triplicate, of the shortages for file with the survey."

INACTIVE DUTY TRAINING FOR RESERVE CHAPLAINS.—Due to the obvious impossibility of calling all Chaplain reserve officers to active duty within a reasonable number of years on account of a scarcity of funds that may be devoted to this use, inactive duty training is assuming greater importance as a means of preparing these officers for a possible emergency. Consequently correspondence courses and volunteer assemblies of reservists for training purposes are coming greatly into vogue. The headquarters, Washington Units, Organized Reserves, is setting up a program of instruction for Reserve officers of all branches residing in the District of Columbia. Reserve chaplains have been asked to meet for this purpose at 8 o'clock on the fourth Monday evening of each month from October to May, inclusive. The office of the Chief of Chaplains has agreed to provide instructors and subject matter for this series of eight meetings. The first meeting in Washington will be held October 26.

STATUS OF AIR OFFICERS OF THE NAVY.—The Personnel Board appointed to consider the promotion status of air officers of the Navy, reference to which was made in ARMY AND NAVY JOURNAL last week, is not expected to make its report until after the Morrow Aircraft Commission shall have submitted its conclusions to President Coolidge. This Board was not appointed to conflict in any way with the activities of the Commission. It was created upon the recommendation of the General Board and named before President Coolidge announced his organization of the body to investigate the aircraft controversy.

It appears that months ago the Bureau of Aeronautics, Navy Department, decided it to be advisable to take steps to determine the promotion method for officers and took up the matter with the Bureau of Navigation, whose recommendations, with all papers, were referred to the General Board which recommended, as stated, the formation of the Special Board. In a word, the appointment of the Board upon the recommendation of the General Board merely was a routine procedure, and there was no ground for irritation by anyone in connection with its appointment.

The testimony brought out by the Aircraft Board will be studied by the Naval Personnel Board, and will be valuable to it in formulating its recommendations. The personnel of the Naval Board is as follows:

Rear Adm. Montgomery M. Taylor, Capt. Walter K. Gherardi, Capt. John R. Y. Blakely, Comdr. Kenneth Whiting, Comdr. John Rodgers, Comdr. Ezra G. Allen, Lt. Comdr. R. R. Pannack, Lt. Comdr. Marc A. Mitschner, Capt. Harry E. Yarnell and Maj. Edwin H. Brainard, U.S.M.C. Lt. Col. Holcombe, U.S.M.C., is the recorder for the Board.

SENATOR BINGHAM FOR ADEQUATE DEFENSE.—Senator Hiram Bingham, of Connecticut, is a firm believer in an adequate national defense, and at a recent gathering of New England Reserve officers in Maine he emphasized this fact very consistently.

Senator Bingham firmly expressed his favor of economy in the Government's administration, but declared that we were in danger that it would take wrong lines unless the public was properly aware of its own needs. This, Senator Bingham said, was the case in regard to national defense measures at the present time. He stressed the value to the nation of the existing organization under the National Defense Act, pronouncing it the most practical, effective, and economical system we have ever had, and said that if the reductions and restrictions which the budget threatened to impose were carried out, it would be dangerously affected, not only by a lessening of material support for the second and third components but by the serious moral effect that would ensue. That the Regular Army was already suffering from existing economy measures was incited by the Senator as his observation during a series of inspection visits to Army posts throughout the country which he had just completed. He referred to the inadequate housing of officers and noncommissioned staff officers at those posts, the deterioration of the horses provided mounted troops, and the insufficiency of the ration allowance for enlisted men. Twenty-nine cents a day, supplemented by a good company funds, might satisfactorily subsidize men in large messes he said, but in this day it will not provide proper nourishment for those in small messes, which are somewhat common in the present reduced state of Regular organizations.

AUTOMATIC INSURANCE FOR ARMY AIR OFFICERS.—The General Staff of the Army has been giving renewed consideration to the question of automatic insurance for air officers. This is a matter which must be passed upon by Congress, and it is not unlikely that consideration by the appropriate committees of the two Houses will be invited to it. It is recognized both by the Army and Navy authorities that the additional risk which flyers incur justifies the increased pay they receive. It is suggested that each flyer be required to defray out of their increased pay the premiums for insurance of five or ten thousand dollars each. Various arguments have been made for and against this proposal.

MAJOR GENERAL HAGOOD, U.S.A., TO MAKE SOME REFORMS.—Maj. Gen. Johnson Hagood, U.S.A., who assumed command of the 4th Corps Area with headquarters at Atlanta, Ga., "will endeavor to reduce staff supervision and place the maximum of authority and responsibility in the hands of troop commanders, cut down paper work, improve living conditions and raise morale." The General made this statement to his command in General Orders, and those who know the General feel assured that he will carry out his projects, which are decidedly for the good of the Service. General Hagood announces the appointment of 1st Lt. Edward H. DeSaussure, Cav., D.O.L., as his aide de camp, relieving 2d Lt. Perry McC. Smith, C.A.C.

REGULAR ARMY TROOPS AS PEACE MAKERS ON FOREIGN SOIL.—Troops from the U. S. Army have again proved their value as peace makers, and without firing a shot. At the request of President Rodolfo Chiari, of Panama, three battalions of the 33d U. S. Infantry, Col. John W. Heavey, from Fort Clayton, C. Z., suppressed riots in Balboa. The troops by their fine discipline and "ready for business" look, at once impressed the mobs, and restored order.

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U. S. ARMY AND COMPONENTS

REGULAR ARMY

DOUGHBOY STADIUM DEDICATION OCTOBER 17.—The Doughboy Stadium will be dedicated October 17 at the annual football clash between the Infantry School and Oglethorpe eleven in the presence of the distinguished guests from the Army and civil life. The dedication marks the successful completion of a project which has been of vital interest to the Infantry branch of the Army. Practically every Infantry regiment of the Regular Establishment contributed its quota for the purchase of a bay in the stadium. Representatives of kindred services, like the Cavalry, also took bays.

Among the notables expected to attend are Congressman W. C. Wright, life-long friend of Fort Benning; Hon. Thornwell Jacobs, president of Oglethorpe University; Hon. F. J. Robinson, general passenger agent of the Central of Georgia Railway; Maj. Gen. W. H. Hart, U.S.A., Quartermaster General; Maj. Gen. A. A. Fries, U.S.A., Chief of Chemical Warfare Service; Maj. Gen. Dennis E. Nolan, U.S.A., Deputy Chief of Staff of the Army of the United States; Brig. Gen. LeRoy Eltinge, U.S.A., commanding the 8th Infantry Brigade, and Brig. Gen. Alfred Bjornstadt, U.S.A., commanding the 14th Infantry Brigade.

Congratulatory messages were received from all over the country and overseas garrisons, including expressions from Maj. Gen. William Lassiter, U.S.A.; Maj. Gen. Commandant John A. Lejeune, U.S.M.C.; Brig. Gen. Wm. D. Connor, U.S.A.; Maj. Gen. Fred W. Sladen, U.S.A.; the commandants of various Service schools, the commanding general of the New York National Guard, and regimental commanders of Regular Army, National Guard, and Organized Reserve Units.

In appreciation of the true significance of this memorial to the doughboy dead, Col. John W. Wright, 5th U. S. Infantry, at Fort Williams, Me., added to his congratulations the following epitomized indication of the meaning of such an effort by the officers and men of the basic military arm:

"The activities of the Infantry School are of incalculable value in enlightening our people as to the true worth of Infantry. The arm that for centuries has offered the greatest sacrifice of dead and wounded on the battlefields has not been appreciated in the past of our country. Our battle history has been written in the blood of footmen."

CAMP LEWIS PISTOL COMPETITION PRIZE WINNERS.—Special troops of the 3d Division won the pistol competition at Camp Lewis, October 2, 1925. The officials in charge were: Executive officer, Maj. R. C. Holliday, Inf.; statistical officer, 1st Lt. G. E. Bruner, Inf. (D.O.L.); supply officer, 2d Lt. K. S. Sweany, 10th F.A.; Cpl. R. R. Beebe, Clerk, 10th F.A.

Teams of 12 men each were entered. The course fired was two scores of five shots each at 25 yards, slow fire; 50 yards, slow fire; 15 yards, rapid fire; 25 yards, rapid fire; 25 yards, quick fire; and 50 yards, quick fire. As 10 shots were fired in quick fire, percentages were not figured, but each hit was given a value of 10 and a miss 0. The total score made by each team in order of merit was as follows:

Special Troops, 3d Division, 6,086; 6th Engrs., 5,889; 10th Field Art., 5,416. A silver cup was awarded to the Special Troops by Maj. Gen. William H. Johnston, U.S.A., commanding the 3d Division, and individual prizes were awarded as follows: High individual score: First prize, a gold medal, 2d Lt. C. B. Magruder, 10th F.A., score, 561. Second prize, a silver medal, Capt. A. P. Croonquist, Special Troops, score, 556. Third prize, a bronze medal, 1st Lt. Frank LaRue, Special Troops, 3d Division, score, 556.

Individual prizes for slow fire: First prize, a silver medal, Capt. A. P. Croonquist, Headquarters and Military Police Co., score, 186. Second prize, a bronze medal, 1st Lt. Frank LaRue, Headquarters Special Troops, score, 186.

Individual prizes for rapid fire: First prize, a silver medal, Staff Sgt. W. B. Carpenter, 10th F.A., score, 190. Second prize, a bronze medal, 2d Lt. C. B. Magruder, 10th F.A., score, 189.

Individual prizes for quick fire: First prize, a silver medal, 2d Lt. D. A. Morris, 6th Engrs., score, 200. Second prize, a bronze medal, 2d Lt. C. B. Magruder, 10th F.A., score, 200.

INFANTRY SCHOOL OFFICERS SET RECORDS FOR SHOOTING.—The Company Officers' Class at the Infantry School at Ft. Benning, Ga., have made a very exceptional series of scores and broke all previous records for class firing. The average for the 177 members of the class was 303.5 out of a possible of 350, which overtops the former high average of 302.11. The individual high man was Capt. Adrian Brian, who made 335 points, equaling the former record score over this range made in the fall of 1924 by Capt. Lloyd S. Spooner, 1st Inf. crack shot.

Most interesting among the comments made on the completion of the work were those from some of the foreign officers attending the Infantry School as guests of the Government. Lieutenants Sardinias and Sedano, of the Cuban Army, expressed themselves as immeasurably improved by the thoroughness and suitability of the instruction. Each bettered his previous records with the rifle.

NEW ARMY INVENTIONS.—An officer on duty at the Tank School has designed a device, consisting of iron braces which are placed on the rear of Army trucks, which will prevent any damage being done to these vehicles as a result of collisions. This has been referred to the Quartermaster General for approval.

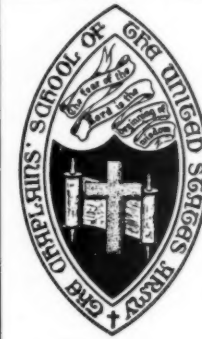
The War Department has placed the responsibility for the design and manufacture of pack-saddle equipment on the Quartermaster General. Previously, certain parts of this equipment were furnished by the Ordnance Department, but according to recent instructions just issued this equipment will be standardized with each supply and using service.

COLONEL ROBINSON AND MAJOR MACDONALD RECOMMENDED FOR D.S.C.—Mr. George Curry, of the International Boundary Committee, has written a letter to The Adjutant General of the Army recommending Col. O. P. Robinson, Inf., and Maj. Charles E. MacDonald, M.C., U.S.A., for the Distinguished Service Cross decoration for service with him in Samar, P. I., during 1905-1906-1907, and in action against hostile Pulajanes.

"On one or more occasions," says Mr. Curry, "these officers assisted me

through several situations, exposing themselves to a vicious assault against the Pulajanes, and through their quick and fearless action and with the use of firearms, undoubtedly saved my own life as well as members of my constabulary organization. The actions on the part of these officers was undoubtedly beyond the call of the ordinary line of duty, and both should be rewarded in a suitable way for this service. Major MacDonald was at the time of this service a contract surgeon, U.S.A., and Colonel Robinson was a captain of Philippine Scouts."

COAT OF ARMS FOR CHAPLAINS' SCHOOL.—An appropriate coat of arms has recently been approved by the Secretary of War for the Chaplains' School. The device chosen for this purpose was originated in the office of the Chief of Chaplains, and is described as follows:



NEW INSIGNIA

Shield.—Sable, a torah proper (a scroll of the law, scroll parchment, gray with rollers of ivory), over all a passion cross, or.

Motto.—"The fear of the Lord is the beginning of wisdom."

Description.—The shield is black, the color of the facings of the Chaplains' Corps, and displays a torah, the symbol of the old law, over which is a gold cross, the symbol of the new faith. The shield and motto are displayed on a pointed oval, the early shape of the church seal, "produced by the intersection of two equal circles, each of which passes through the center of the other, producing that which is true." In the space in the oval above the shield is a ribbon scroll bearing the motto. Around the edge of the oval is the legend, "The Chaplains' School of the United States Army."

OFFICERS FOR SPECIAL SERVICE SCHOOLS.—Maj. Gen. Robert L. Howze, commander of the 5th Corps Area, Ft. Hayes, has been requested by the War Department to submit the names of Infantry officers of the Army recommended by him to attend the Advanced and Company Officers' Courses of the Infantry School, the Tank School, the Signal School, the Air Service Tactical School, the Coast Artillery School and the Marine Corps School during the school year 1926-27, recommendations to reach the War Department by November 16.

It is stated that in the interests of economy and to reduce to a minimum the changes of station of Infantry officers, it is particularly desired to detail to the Infantry School those officers on D.O.L. duties whose tours expire next summer, there being many officers, for example, whose tours of duty with the Reserve Officers' Training Corps and National Guard normally expire at that time, and for whom a change of station is desirable; in most cases it being believed that such of these officers as have not attended the Infantry School should be detailed thereto next year. It is stated that every effort will be made to keep all activities filled to authorized strength, replacements being made from sources without the Fifth Corps Area where necessary.

NATIONAL GUARD

PENNSYLVANIA NATIONAL GUARD MAKES FINE EFFICIENCY RECORD.—The activities of part of the Pennsylvania National Guard which was ordered out with no advance notice to report to Mr. Egge, superintendent of the Air Mail Service at Bellefonte, Pa., to aid in the search for the missing aviator, C. H. Ames, who was found dead on October 11, discloses some exceptionally efficient services on the part of the Pennsylvania National Guard under its present organization. The mobilization was completed quickly and smoothly, and the cooperation of the Pennsylvania Railroad was also commendable in the emergency in question. The facts of this emergency service in brief are as follows:

On October 6 the Adjutant General of Pennsylvania received a telegram from Governor Pinchot, who happened to be in the vicinity of Bellefonte, Pa., instructing him to cause to be sent to Mr. Egge such troops as would aid him in the search of the missing aviator. The Adjutant General communicated by telephone at once with Mr. Egge, and as a result of the consultation the division commander was directed to at once send certain troops on this mission. At 10:30 a. m., October 6, the division commander telephoned to Bellefonte to Major Curtin, commanding the Machine Gun Squadron, a part of the 52d Cavalry Brigade, to order out his squadron for duty, together with Troop B, 104th Cavalry, from Tyrone, and Troop F, 104th Cavalry, from Punxsutawney.

The mobilization was completed at 5 p. m., October 6; Troop C entrained at Lewistown at 5:15 p. m.; Troop A, of Bellefonte, and Troop B, of Boalsburg, entrained at Bellefonte at 6:10 p. m. All organizations proceeded to Tyrone, where a special train was made up, including Troop B, 104th Cavalry, from Tyrone, and all proceeded directly to Clarion, Pa., where the train arrived at 7:15, October 7, with 10 officers and 218 enlisted men. Troop F, of Punxsutawney, entrained at Punxsutawney at 9:15 p. m., and arrived in Clarion at 3 a. m., with 2 officers and 35 men; making a total of 21 officers and 253 men.

This was quick work, and with absolutely no notice it will be seen that within seven hours from the telephone message to the major commanding the squadron, the squadron and one troop were moving on a special train to begin the search. These organizations are scattered over a territory of 50 miles, and the membership is composed of men in every vocation of life, who were called abruptly from their labors to duty.

SPECIAL COURSES AT GOLDEN GATE FOR NATIONAL GUARD AND RESERVES.—Reserve and National Guard Officers in San Francisco and vicinity will receive complete courses of instruction in various military duties this winter. In addition to the Army Correspondence Schools, a series of lectures, conferences and tactical problems will be given. Instruction will be given by Regular Army officers, chosen for their special knowledge of the subject matter. The National Guard Armory, Fourteenth and Mission Streets, San Francisco, will be used as a meeting place for the purpose of conducting the course. It is desired that all National Guard and Reserve Officers pursue this course of instruction, which commenced on October 1.

(Further National Guard and Reserve News on page 155)

WAR DEPARTMENT ORDERS

Commander-in-Chief—Calvin Coolidge, President.
Secretary of War—John W. Weeks.
Assistant Secretary of War—Col. Dwight F. Davis.
Chief of Staff—Maj. Gen. John L. Hines.
Deputy Chief of Staff—Brig. Gen. Dennis E. Nolan.

CHANGES IN STATION OF TROOPS

The following units were ordered October 8 from their present stations to new stations indicated below:

1st Engineers—Cos. A and B, Ft. Hancock, N. J.; Co. D, Ft. DuPont, Del.; Co. E, 6th Engineers, Ft. Winfield Scott, Calif.; Co. B, 13th Engineers, Ft. Humphreys, Va., and 6th Signal Service Co., Ft. Sheridan, Ill.
Troop B, 6th Cavalry, Ft. Oglethorpe, Ga.; 10th Cavalry, Ash Canyon, Ariz.; Troop F, 11th Cavalry, Presidio of San Francisco, Calif.; 14th Cavalry, less 1st Squadron and Troop E, Omaha, Neb.; 1st Squadron, Ft. Sheridan, Ill.; Troop E, Ft. Des Moines, Iowa.
Headquarters and Headquarters Battery, 1st F.A. Brigade, Ft. Hoyle, Md.; Headquarters and Headquarters Battery, 2d Battalion, 7th F.A., Madison Barracks, N. Y.; 9th F.A., Batteries A and B, Omaha, Neb.; 1st Battalion, 14th F.A., less Batteries B and C, Ft. Sheridan, Ill.; Battery B, Ft. Sheridan, Ill.; Battery C, Jefferson Barracks, Mo., and Battery F, 15th F.A., Ft. Sam Houston, Tex.

Battery G, 11th C.A., Ft. Terry, N. Y.; 62d C.A., Battery A, B and F, Mitchell Field, N. Y.; Battery C, Ft. Totten, N. Y.; Headquarters and Headquarters Battery, and Batteries A, B, and E, 63d C.A., Santa Cruz, Calif.; Headquarters and Headquarters Co., 12th Brigade, Ft. Sheridan, Ill.

2d Infantry, less 2d and 3d Battalions, Ft. Sheridan, Ill.; 2d Battalion, Ft. Wayne, Mich.; 3d Battalion, Ft. Brady, Mich.; 3d Infantry, 1st Battalion, Ft. Snelling, Minn.; Co. K, Duluth, Minn.; 3d Battalion, 4th Infantry, Ft. Lawton, Wash.; 5th Infantry, 1st Battalion, Ft. McKinley, Me.; 2d Battalion, less Co. H, Ft. Williams, Me., and Co. H, Ft. Preble, Me.

3d Battalion, 6th Infantry, Jefferson Barracks, Mo.; 7th Infantry, less Headquarters, 2d Battalion and Cos. E, F, and G, Vancouver Barracks, Wash.; 9th Infantry, less 1st and 3d Battalions and Service Co., Ft. Sam Houston, Tex.; 10th Infantry, Co. B, K, and L, Ft. Benjamin Harrison, Ind.; Co. E, Boston Mills, Ohio; 13th Infantry, regimental, Headquarters Service Co., and 3d Battalion, less Co. M, Ft. Andrews, Mass.; Headquarters Co., Ft. Warren, Mass.; 1st Battalion, Ft. Strong, Mass.

16th Infantry—Cos. C and E, Ft. Jay, N. Y.; Co. I, Ft. Wadsworth, N. Y.; 17th Infantry—1st Battalion, Headquarters, Headquarters Co., and Service Co., Ft. Crook, Neb.; 2d and 3d Battalions, Ft. Omaha, Neb.; 18th Inf.—Cos. A and C, Ft. Slocum, N. Y.; Co. M, Ft. Hamilton, N. Y., and Co. L, 19th Infantry, Schofield Barracks, T. H.

20th Infantry, less 1st and 3d Battalions, Headquarters Co., 23d Infantry, Ft. Sam Houston, Tex.; Co. K, 24th Infantry, Southern Field, Americus, Ga.; 1st Battalion, 25th Infantry, Ft. Huachuca, Ariz.; 28th Infantry—1st Battalion, Ft. Porter, N. Y.; 3d Battalion, less Co. K, Ft. Ontario, N. Y.; 30th Inf., less Co. C, G and I, Presidio of San Francisco, Calif.; and Co. K, 65th Infantry, Post of San Juan, P. R.

1st Platoon, 5th Tank Co., Ft. Benjamin Harrison, Ind.; 1st Platoon, 6th Tank Co., Jefferson Barracks, Mo.; 1st Platoon, 7th Tank Co., Ft. Omaha, Neb., and 1st Platoon, 9th Tank Co., Army Base, Boston, Mass.

3d Division Air Service 91st Observation Squadron and 15th Photo Section, Crissy Field, Calif.; 7th Division Air Service 16th Observation Squadron, and 9th Photo Section, Ft. Riley, Kans., and 7th Pack Train, Ash Canyon, Ariz.

Circular 43, October 6, 1925, War Department

This circular relates to the following subjects:

Address of Finance Officer, Paris, France.
Basic allowances of equipment special for Infantry, Table IV-A.

Recession of the provisions of the Manual for the Quartermaster Corps.

Authorized procedure to correct stock record accounts where apparent overages of property have been taken up erroneously.

Report of flying done by Air Service reserve officers.

Recession of certain War Department numbered circulars.

GENERAL OFFICERS

Brig. Gen. J. McA. Palmer, U.S.A., to Army Retiring Board, Washington, D. C., for examination. (October 9.)

Maj. Gen. G. B. Duncan, U.S.A., retired from active service October 10, 1925. (October 10.)

Brig. Gen. B. A. Poore, U.S.A., appointed major general from October 11, 1925. (October 11.)

Col. M. J. Lenihan, Inf., appointed brigadier general from October 11, 1925. (October 11.)

JUDGE ADVOCATE GENERAL'S DEPT.

MAJ. GEN. JOHN A. HULL, J.A.G.
Maj. R. G. Watson to Army Retiring Board, San Francisco, for examination. (October 13.)

QUARTERMASTER CORPS

MAJ. GEN. W. H. HART, Q.M.G.
First Lt. R. W. French to Vancouver Barracks, Wash., for duty as assistant to quartermaster. (October 9.)

Capt. E. Garcia to Ft. Howard, Md., for duty as quartermaster. (October 9.)

First Lt. H. J. Conner, from Ft. Howard, Md., on arrival of Captain Garcia, to Ft. Humphreys, Va., for duty as assistant to quartermaster. (October 9.)

First Lt. H. B. Nurse to duty as assistant to C.A.Q.M., 2d C.A., in addition to other duties. (October 12.)

MEDICAL DEPARTMENT

MAJ. GEN. M. W. IRELAND, S.G.

Medical Corps

Capt. F. H. Thorne to School of Aviation Medicine, Mitchell Field, L. I., N. Y., November 1, for duty. (October 9.)

Capt. P. L. Cook to New York, and sail January 6 to Hawaii for duty. (October 9.)

Veterinary Corps

Capt. A. C. Wight to Ft. Sam Houston, Tex., for duty. (October 8.)

FINANCE DEPARTMENT

MAJ. GEN. K. W. WALKER, C. OF F.

Capt. C. R. Fouts to New York, and sail November 24 to Porto Rico for duty. (October 9.)

CORPS OF ENGINEERS

MAJ. GEN. HARRY TAYLOR, C. OF E.

Maj. A. L. Ganahl to Army and Navy Hospital, Hot Springs, Ark., for treatment. (October 9.)

CHAPLAINS

COL. J. T. AXTON, C. OF CHAP.

Rev. E. R. Martin appointed chaplain (1st lieutenant) Regular Army from October 3, 1925, to Ft. Jay, N. Y., for duty. (October 8.)

CAVALRY

MAJ. GEN. MALIN CRAIG, C. OF CAV.

Capt. T. Brady, Jr., to 2d Cavalry, Ft. Riley for duty. (October 8.)

First Lt. J. G. Boykin to 3d Cavalry, Ft. Myer, Va., for duty. (October 10.)

FIELD ARTILLERY

MAJ. GEN. W. J. SNOW, C. OF F.A.

First Lt. A. M. Gruenther to 9th F.A., Ft. Des Moines, on completing foreign service in Philippines. (October 9.)

Col. H. L. Newbold to Artillery group, Organized Reserves 6th C.A., Chicago, on completing foreign service in Hawaii. (October 9.)

INFANTRY

MAJ. GEN. ROBERT H. ALLEN, C. OF INF.

First Lt. L. C. Boineau to New York, and sail January 21 to Canal Zone for duty. (October 8.)

First Lt. G. S. Mickle to 12th Infantry, Ft. Howard, Md., on expiration of leave. (October 8.)

Capt. L. W. Foy to Ohio State University, Columbus, for duty. (October 9.)

Maj. J. J. Koch to recruiting duty, Chicago, on completing foreign service in Panama. (October 9.)

Capt. O. K. Wolter to Army and Navy Hospital, Hot Springs, Ark., for treatment. (October 9.)

Maj. J. H. Van Vliet to Infantry School, Ft. Benning, Ga., for duty. (October 10.)

Col. H. A. Hanigan to duty with Org-Res, 9th C.A., at Los Angeles supply point, Calif. (October 12.)

First Lt. A. P. Fox to 5th C.A. for duty. (October 13.)

Col. H. L. Laubach to duty as officer in charge, Org-Res, 1st C.A., Boston, Mass., on completing foreign service in Hawaii. (October 13.)

AIR SERVICE

MAJ. GEN. M. M. PATRICK, C. OF A.S.

Capt. L. F. Stone, 1st Lts. H. C. Downey and R. C. W. Blessley to duty with industrial war plans section, McCook Field, Dayton, Ohio. (October 8.)

Maj. A. H. Hobley is designated officer in charge, industrial war plans section, McCook Field, in addition to other duties.

First Lt. D. R. Stinson, R. K. LeBrou, F. L. Cook and E. H. Wood to Middletown air depot, Pa., for duty. (October 8.)

First Lt. W. F. Robinson to Pope Field, Ft. Bragg, N. C., for duty. (October 9.)

LEAVES

One month to Maj. M. E. Guerin, J.A., October 19, with permission to leave U. S. (October 8.)

Leave granted 1st Lt. J. B. Carroll, A.S., extended one month. (October 8.)

Three months and 21 days to 1st Lt. E. F. Rea, F.D., November 15. (October 9.)

One month and 12 days to Capt. J. A. Gilman, Q.M.C., October 10. (October 9.)

Three months sick leave to Capt. C. W. Yuill, Inf., October 10. (October 9.)

Two months and 12 days to 1st Lt. J. G. Shannonhouse, C.W.S., on arrival in San Francisco. (October 9.)

One month and 23 days to 1st Lt. F. M. Harris, Inf., November 10. (October 10.)

Four months to 1st Lt. T. T. Teague, S.C., January 1. (October 10.)

One month sick leave to Capt. L. A. Pulling, Cav., October 10, with permission to leave U. S. (October 10.)

Two months and 8 days to Capt. C. M. Lyons, Inf., October 25. (October 12.)

Two months to Capt. G. Read, Jr., November 1. (October 12.)

Two months and 10 days to Maj. J. G. Steese,

U.S.A., Ret., with permission to leave U. S. (October 13.)

Leave granted 2d Lt. LeR. J. Stewart, F.A., extended four months. (October 13.)

Two months to Capt. B. G. Shoemaker, Cav., about October 15. (October 13.)

One month and 5 days to 1st Lt. H. H. Fisher, Inf., on arrival in New York. (October 13.)

PROMOTIONS

The promotion of the following officers is announced:

Field Artillery.—Capt. J. Keiher to major, September 17.

Infantry.—Capt. B. W. Mills to major, September 21; 1st Lt. I. S. Dierking to captain, September 1; 2d Lt. C. K. Gailey, Jr., to 1st lieutenant, September 26.

Veterinary Corps.—Capt. G. H. Koon to major, September 27.

Each officer will remain on his present duties. (October 9.)

TRANSFERS

First Lt. C. Backes, Inf., to A.S., September 29, 1925. (October 9.)

Second Lt. G. A. Chester, F.A., to C.A., September 30; to temporary duty 7th C.A., Ft. Hancock, N. J., thence to N. Y., about January 6, to Philippines for duty. (October 12.)

Second Lt. G. O. Barcus, F.A., to Cav., September 30; to 2d Cav., Ft. Riley, Kans., for duty. (October 12.)

RESIGNATIONS

The resignations of the following have been accepted: Maj. DeF. W. Morton, Q.M.C. (October 8); Wm. Officer L. B. Roberson, A.M. P.S. (October 8); Wm. Officer A. Desmond, Ft. Omaha (October 9).

RETIREMENT OF ENLISTED MEN

The Army and Navy Journal will be pleased to receive complimentary orders relating to retirements of enlisted men.

The following enlisted men will be placed on retired list at places indicated:

Sgt. W. Simon, D.E.M.L., at Ft. Leavenworth. (October 8.)

Master Sgt. T. Sheehan, 11th Engrs., at Corozal, C. Z. (October 9.)

Master Sgt. G. Harting, 31st Inf., at Manila, P. I. (October 9.)

First Sgt. A. Baker, D.E.M.L., at U.S.M.A., West Point, N. Y. (October 9.)

First Sgt. E. Roskowski, 18th Inf., at Ft. Schuyler, N. Y. (October 9.)

Sgt. A. J. Schreiner, 4th Inf., at Ft. G. Wright, Wash. (October 9.)

Master Sgt. C. McMunn, 4th Inf., at Ft. G. Wright, Wash. (October 9.)

Staff Sgt. W. M. Naylor, Q.M.C., at Ft. Sam Houston. (October 9.)

Master Sgt. W. J. Ghent, 5th Cav., at Ft. Clark, Tex. (October 9.)

Sgt. T. Bairfield, D.E.M.L., at U.S.M.A., West Point, N. Y. (October 9.)

Master Sgt. J. L. Nelson, 13th C.A., at Ft. Barrancas, Fla. (October 10.)

Master Sgt. W. L. Mayne, D.E.M.L., at Knoxville, Tenn. (October 10.)

Master Sgt. A. Kosicki, 34th Inf., at Ft. Eustis, Va. (October 10.)

First Sgt. W. Edwards, 6th C.A., at Ft. W. Scott, Calif. (October 10.)

Sgt. N. Van Alstyne, 65th C.A., at Ft. Amador, C. Z. (October 10.)

Staff Sgt. A. Erdman, 55th C.A., at Ft. Shafter, H. T. (October 10.)

Master Sgt. P. J. Shea, M.D., at Boston, Mass. (October 10.)

The Army and Navy Journal desires to receive from commanding officers all complimentary orders relating to the retirement of enlisted men for publication in its columns.

Master Sgt. W. C. Beasley, O.D., at Vancouver Barracks, Wash. (October 12.)

First Sgt. J. W. Nichols, at Ft. Sam Houston, Tex. (October 13.)

Sgt. W. Stewart, at Ft. Riley, Kans. (October 13.)

NEW 2D LIEUTENANTS ASSIGNED

The appointment and assignment of the following 2d lieutenants, Regular Army, from enlisted men, and from civilian life, is announced:

With Rank from June 15, 1925—Enlisted Men With Two Years' Service

Cavalry

Cpl. H. L. Boyden to 2d Cavalry, Ft. Riley.

Cpl. J. G. Pratt to 2d Cavalry, Ft. Riley.

Field Artillery

Cpl. G. R. Helmick to F.A., 1st Cav. Division.

Infantry

Sgt. C. W. Westlund to 2d Infantry, Ft. Sheridan, Ill.

Pvt. (1cl.) H. K. Vail to Infantry, 1st Division.

Air Service

Master Sgt. W. L. Wheeler to A.S., Hawaiian Department.

Staff Sgt. N. D. Frost to Brooks Field, Tex.

Tech. Sgt. L. D. Frederick to Brooks Field, Tex.

Flying Cadet W. L. Harris to Langley Field, Va.

Staff Sgt. M. M. Murphy to Brooks Field, Tex.

Staff Sgt. L. Q. Wasser to Kelly Field, Tex.
Tech. Sgt. G. C. McGinley to Kelly Field, Tex.
Flying Cadet O. Wienecke to Kelly Field.
Master Sgt. B. T. Starkey to Phillips Field, Md.

With Rank from June 30, 1925—Civilians and Enlisted Men, Regular Army, With Less Than Two Years' Service

Cavalry

R. H. Bridgman to 2d Cavalry, Ft. Riley.

Field Artillery

P. W. Thompson to 3d F.A., Ft. Benjamin Harrison, Ind.

John Meade to F.A., 1st Division, 2d C.A.

G. O. Barcus, unassigned.

G. A. Chester, unassigned.

J. T. Dawson to 3d F.A., Ft. Benjamin Harrison, Ind.

B. D. Gill to F.A., 1st Cavalry Division.

W. L. Cornelius, unassigned.

W. H. Kennett to 2d F.A., Ft. Bragg, N. C.

G. P. Harrison to F.A., 1st Division, 3d C.A.

Second Lt. W. L. Cornelius detailed in A.S. and to A.S. Advanced Flying School, Kelly Field, Tex., for duty. (October 12.)

Coast Artillery Corps

L. D. Solomonson to temporary duty at Ft. Hancock, N. J., thence from New York, about December 4, to Hawaii for duty.

O. P. Nutter to temporary duty at Ft. Hancock, N. J., thence from New York, November 24, for Panama Canal Zone for duty with C.A.

D. H. Smith to temporary duty at Ft. Hancock, N. J., thence from New York, November 24, for Panama Canal Zone for duty with C.A.

W. A. Weddell to temporary duty at Ft. Hancock, N. J., thence from New York, October 28, to Hawaii for duty with C.A.

B. F. Hayes, Jr., to Ft. Hancock, N. J., for assignment to station and duty.

E. X. Ware, unassigned.

E. C. Franklin to temporary duty at Ft. Hancock, N. J., from New York, about January 6, to Philippines for duty with C.A.

Second Lt. A. S. Howell, Jr., retired from active service. (October 13.)

Infantry

C. McC. Virtue to 10th Infantry, Ft. Thomas, Ky.

R. Finch to 11th Infantry, Ft. Benjamin Harrison, Ind.

J. H. Baumann to 29th Infantry, Ft. Benning, Ga.

M. J. Tierney to Infantry, 1st Division, 9th C.A.

G. V. Irvin to 11th Inf., Ft. B. Harrison, Ind.

F. V. Holloman to 20th Inf., Ft. Benning, Ga.

G. H. Dietz to Infantry, 3d Division, 9th C.A.

L. G. Causey to 22d Infantry, Ft. McPherson, Ga.

J. R. Peter to 29th Infantry, Ft. Benning, Ga.

G. M. Evans to 2d Infantry, Ft. Sheridan, Ill.

T. A. Seely to Infantry, 3d Division, 9th C.A.

W. W. O'Connor to Infantry, 1st Division.

F. L. Lichtenfels to Infantry, 3d Division, 9th C.A.

W. F. Niethamer to 2d Inf., Ft. Sheridan, Ill.

H. V. Roberts to Infantry, 3d Division, 9th C.A.

Air Service

A. J. Yauger to A.S. Primary Flying School, Brooks Field, Tex.

C. H. Valentine to A.S. Primary Flying School, Brooks Field, Tex.

J. K. Gibson to A.S. Primary Flying School, Brooks Field, Tex.

D.E.M.L.

Sgt. J. Vollman to D.E.M.L., Pennsylvania National Guard, as instructor of Infantry, Wilkes-Barre, Pa., for duty. (October 9.)

Sgt. H. L. Fluharty to D.E.M.L. and duty with W. Va. N.G. as instructor of Infantry, at Welch, W. Va. (October 12.)

ARMY FIELD CLERKS

A. F. C. F. Power to Presidio of San Francisco for duty on expiration of leave. (October 13.)

"Our Country! In her intercourse with foreign nations may she always be in the right; but our country, right or wrong."—Stephen Decatur.

THE SERVICES ARE BEHIND YOU, MR. PRESIDENT

NO part of our people more earnestly concurs in the President's strictures against militarism in his Omaha speech than that which makes up the Army and the Navy. Nothing could be more repulsive to them, nothing more harmful to their convictions, and, indeed, to their very lives, than the development of a satrapy in their native land. Loyalty to its institutions, the loyalty that meets Death gladly for the maintenance of an ideal—that is the spirit which inspires both Services. It has found expression in the heroic deeds of the past; it would find equally heroic expression were the need here. And it is with this knowledge of our history, this acquaintance with the personnel of the Army and the Navy today that, undoubtedly, caused the President, in his address, to characterize the profession of arms as an "honorable and patriotic calling of the highest rank."

Because of the reproach which such activities visit upon both Services there is not a thinking officer of either who does not emphatically condemn the public operations and loose expressions of individuals designed to further personal ambition or a cause which they place upon the good of the Army and Navy as a whole. These operations and expressions become classified as propaganda, and as such arouse public opinion jealous at base of even a tendency toward infringement upon civil authority. We insist that the objectionable things, which aroused the Presidential fears, were the half-baked notions of a very few thoughtless irresponsibles, whose acts do not reflect the patriotic attitude of practically all Army and Navy officers; and we are sure that in publicly reprobating them the President did not have any idea of reflecting upon the loyalty of the men who have unselfishly devoted their lives to their country's defense.

It is because the Army and Navy are equally earnest in their support of civil authority that they resent any activity which carries the suggestion of lessening it. So it is, the President's utterances find a ready response in the heart of the Services, and his warning a well-timed injunction to curb activities capable of misconception or misinterpretation.

The President's address was not a pacifist pronouncement. He reiterated his devotion to peace, and, as part of his program, he maintained his advocacy of National Defense. Here, again, the Services stand squarely behind their Commander in Chief. Ninety-five per cent of the activities of the Army and Navy throughout the history of the Republic have been devoted to the preservation of peace. A review of what has happened since the war demonstrates this to be the case. Upon General Pershing's shoulders has been placed the responsibility of averting war in South America, and without any fanfare of trumpets, with that greatness of soul which regards peace as the choicest blessing of mankind, that superb soldier of our times is working toward a satisfactory solution of the dangerous question of Tacna and Arica. The fine work of Rear Admiral Bristol at Constantinople and Lausanne aided in preventing the blowing up of the powder magazine which Turkey represents. Nothing could have been more admirable than the achievements of Rear Admiral Andrews in averting war between Italy and Jugo-Slavia. To such things the Army and Navy, as champions of Peace, can point with modest pride. They have represented the best of a noble Democracy, and in so doing they have loyally carried out the policy of their civil superiors. Such achievements have the approbation of an appreciative country, and tend to emphasize its realization that adequate national defense is not only a safeguard of our security but a means by which the peace of the world can be advanced.

So, Mr. President, the Army and Navy are with you and behind you—yours to command, theirs to do, and, if necessary, die in defense of our institutions as they are.

WE WILL MISS YOU, MR. WEEKS

To MR. WEEKS:

To you, Mr. John W. Weeks, the Army you have loyally commanded as Secretary of War extends its affectionate wishes for health and long life. We realize that necessity alone forced your resignation. We realize that your heart has been with the Service, and that you devoted all the resources of your fine mind not only to its improvement but to its maintenance as an efficient and adequate arm of our National Defense. We ask, though we know there is no need of asking, that you continue to wield your great influence in our behalf. But especially do we, who are grateful to you, beg that you guard your health, so that you may, in private life, continue to be that column of civic strength which, in its support of our institutions, forms a shining monument to the devoted patriotism you have always expressed.

THE ARMY.

REVEILLE

By BUGLER BILL

"A soldier makes a mighty poor candidate."
"How come?"
"He never learned to run."

Chairman Martin Madden has the best idea for naval and military economy since the Wilson administration made one hard-worked officer do double duty as aide to both the President and Secretary Daniels.

THE WEE HOURS

My partner hailed from gay Patee;
I asked her for a kiss,
And when she cried, "Non, non!" to me,
Her tone lacked emphasis.
We danced until the moon was low,
And at my next demand,
She could no longer say "Non, non!"
The "oui" hours were at hand.
—American Legion Weekly.

"Hey! Hoot! Why the bottle?"
"What bottle?"
"Why, the one with the neck and a place for a cork."
—Garry Owen Trumpeter.

Sentry: "Halt! Who is there?"
Voice: "Anthony and Cleopatra."
Sentry: "Advance, Cleopatra, and tell Anthony you've got a date."
—The Pointer.

A "Snake" is always ready to grab off a Cleopatra, but why insist on giving poor old Anthony "h"?

"Juhearthu Wunabout, the soldier in the 1st Battalion, was under the impression that Anti-Aircraft was a female relation."
—Red Guidon.

Pardonable mistake—he got it mixed up with "poor relation."

"Colonel Mitchell" appeared before the Shenandoah investigating committee and said he wouldn't talk. Five reporters were so surprised they leaped from the windows and four Army officers fainted dead away."
—Chicago Tribune.

"Will you furnish names in list of casualties?"—N.S.M.

Exaggeration here somewhere—no reporter was ever surprised at anything Billy Mitchell ever did.

The Army reformers will have to show Secretary Dwight F. Davis—he's from Missouri!

Little Willie Hick, of South Bend, Ind., after reading what the sporting writers had to say about Walter Johnson, wants to know what the Washington pitching ace did with his long white whiskers and crutches when he was carried out to the box in a wheel chair to win those two games.

Chairman Madden opines that if the Army and Navy don't like the aviation appropriation for the two services they can lump it.

"What did you break off the engagement for, Sergeant?"

"I found she expected me to support her in a manner to which she ain't never been accustomed."

"I favor a referendum by the people before Congress can declare war," insisted Percy.

"But suppose the enemy wouldn't wait for the re-count from Iowa?"

The Army breaks the world's aerial speed record and the Navy comes in second. All Cal's chilluns got wings!

VOICE OF SERVICES

Please keep all communications within 150 words

WANTS AIR SERVICE UNIFORM

To THE EDITOR:

Now that the Air Service has been granted a distinctive uniform and the remainder of the Service has had an opportunity to observe the new blouse, I believe the time is ripe for agitation for the change to embrace all branches. There is no reason why the fliers should be given a more comfortable working uniform than the Infantrymen, Cavalrymen, quartermasters, etc. The new Air Service uniform was designed primarily, I believe, for comfort while at work. The old-style standing collar was believed a poor work collar for an aviator. I can not see why this fact should not be true for foot soldiers, horse soldiers or desk soldiers. If the present type collar is not suitable for labor for a man in an airplane, it certainly isn't suitable for a soldier who, under certain conditions, parades in the hot sun, wears a full pack, works up a perspiration while riding, or sits all day long behind a desk or counter in a sweltering office.

The collar does not necessarily make the uniform. Officers frequently wear evening dress and civilian clothes, but the fact that they wear at these times a lapel collar does not make them un-military or sloppy. If a man after several years of service looks like a soldier only when he wears a high collar, then the fault lies deeper than the uniform.

I do not think the Reserve Officers who say the Regulars do not really need a change, are quite fair. The average Reserve Officers wear their uniforms about two weeks each year. The Regulars wear the blouse continuously from the beginning of cold weather until spring, and always, winter or summer, when at dress formations, and at civilian gatherings. Some of us wear civilian clothes, to get away from the uncomfortable standing collar. But because we wear civilian clothes, we do not object to the styles, and do not try to say what the civilian will wear. I believe that if the Reserve Officers who object to the change had the opportunity to wear the present blouse continuously for a period of 12 months, they would side with many of us on the proposed change.

INFANTRYMAN.

ASK THE JOURNAL

J. D., NOME, ALASKA.—Q. Am married and have lived out of Government quarters since October, 1924, during which period I have not received commutation of quarters or any kind of allowance. I am of the opinion that if a soldier lives out of quarters and does not draw monetary allowance, he will be furnished his allowance in kind, or vice versa. Will you please advise me if I can put in for a claim, and under what provisions? A. In the event that Government quarters were not furnished, you are entitled. Under Army Regulations 35-4520, the per diem allowance of 75c is payable. In view of the information which you have given in your letter, suggest that you submit your claim through your commanding officer to the Chief of Finance, Washington, D. C.

J. M., FT. WADSWORTH, N. Y.—No appointments have been made in this grade since the publication of Quartermaster Circular No. 11. You are still No. 8 on this list.

MASTER SERGEANT, RETIRED, CORONADO, CALIF.—Q. Will you please inform me whether the Quartermaster Corps employs American citizens at the overseas national cemeteries, in France and Belgium, and if so, is a retired enlisted man eligible for employment in this branch? A. Almost invariably, retired enlisted men of the Army are given preference for this work. For your information, however, the waiting list for this particular branch is so long that there is no immediate prospect of your being appointed soon. Applications for this work should be filed with the Quartermaster General of the Army, Washington, D. C.

COAST ARTILLERYMAN.—No men on foreign service who qualified in the recent Coast Artillery examination will be sent to the school. Your second question is answered in the negative.

T. S., CORONADO CANAL ZONE.—Q. (1) What date did the 30th Volunteer Infantry, aboard the U.S.A.T. Sherman, arrive at Manila in the year 1899? (2) What date did the 60th Company, Coast Artillery, leave Manila on the U.S.A.T. Meade in the year 1901? A. (1) October 21, 1899. (2) October 1, 1901.

FOR OUR WOMEN OF THE SERVICES NEW FEATURE! PARIS FASHION NOTES!

By COUNTESS MARY TOLSTOY

PERHAPS it is due to the unusually cold weather that we are having this Fall that one of the most important novelties of the present Paris season is the new dyed and painted fur. The Exposition des Arts Decoratifs may be partially responsible; inspiration for the designs may have come from there. A big factor, however, is the fact that as the price of fur goes up and up and up, a great deal of ingenuity must be employed to bring such a necessary article within the means of the average purse. Ermine, sable, chinchilla, even squirrel having become objects of great luxury, the skins of less important animals are more frequently employed.

An amusing effect is given by hareskins stamped in stripes, squares and various designs. These are usually worn on street costumes. A favorite kind is yellow with narrow black stripes, which go very well with the bottle green that is so fashionable. The other popular color of the season is dark red, a wine color that might be burgundy or claret, though the French usually speak of it as Bordeaux.

A strange exotic effect is given to evening wraps when they are trimmed with fur collars and cuffs of the same shade. Thus one sees purple, pink, green and blue, reminding one of the colored wigs worn a few seasons ago, and rather suggesting the porcelain cats that are sold at Mont St. Michel. It is not cat-skin, but rabbit, that is tinted in this decadent fashion.

Another striking novelty is the feathered flower. The petals of roses and peonies are made of small, painted feathers, and the effect is quite charming. Chanel uses them on the scarf of her most popular evening dress.

Jeweled shoulder bands are being sold in some of the smart shops on the Rue de la Paix. They are attached to dress slips, and are very effective under transparent shoulder straps of the crepe georgette and mousseline de soi dresses so popular for dancing.

RECIPES

A DOLLAR WILL BE PAID FOR EACH ONE PUBLISHED

They should be sent to the Recipe Editor, ARMY AND NAVY JOURNAL,
1523 L Street NW., Washington, D. C.

FRUIT CAKE.—1½ lbs. brown sugar, 1 lb. butter, 1 lb. mixed nuts, 1 lb. figs, 1 lb. currants, 2 lbs. raisins, ½ lb. citron, ½ lb. lemon and orange peel, 1¼ lbs. sifted flour, 10 eggs, 1 wine glass of brandy or spirits, 1 teaspoon nutmeg, 1 teaspoon cinnamon, ½ teaspoon mace, ½ teaspoon cloves. Mix flour and butter, add yolks of eggs and sugar mixed well, add spices and brandy. Flour fruit well and add. Beat whites of eggs to stiff froth and fold gently to above. Bake in a moderate oven 3 hours and ice when cool. (Will keep for years.)

ICING.—White of 1 egg, 1 tablespoon of water, pinch of cream of tartar. Beat in enough powdered sugar to thicken; spread when cake is cool.—Mrs. A. A. Wedemeyer.

QUINCE AND CARROT CONSERVE.—Three good-sized quinces and three or four tender carrots, peeled and diced. One lemon and one orange sliced thin, rind and all. Make a sirup of one cup white Karo and two cups of granulated sugar seasoned with one-third teaspoon each of ground cloves, cinnamon and allspice. Cook the fruit slowly in the hot sirup until opaque, then pack solid into jars, filling with the sirup to the top. The extra sirup will make a cup of jelly or a delicious sauce for sponge cake.—Mrs. Irma Thompson Ireland.

FOREIGN MILITARY AND NAVAL NEWS

LESSONS OF BRITISH ARMY MANEUVERS.—As to the lessons learned by the recent elaborate British Army maneuvers in England, one of the ideas conveyed is that opposing forces must be placed farther apart in these days of lorry-borne Infantry, fast tanks, motor-drawn Artillery, and armored cars. Mobility does not rest with the horse alone, and forward positions can be seized by Infantry almost as quickly as by Cavalry. Thus comments the Army and Navy and Air Force Gazette of London, which also goes on to say: "It seemed that the Cavalry Division might with advantage have crossed the River Test, and delayed the opposing approach to the crossings, but here again arises the point that the distance separating the forces was not sufficient for keeping the Infantry apart very long."

"Every new device in war has its antidote, but there is no reply to superior weight of skilfully used Infantry. It may suffer heavily under the new machine, but if it is numerous enough it will conquer the enemy and hold his country. In modern war the man and not the machine decides."

"Field Marshal Sir William Robertson is of opinion that the two mechanized Field Artillery brigades, of which one was allotted to each of the two forces, had not much opportunity during the maneuver period of proving the value of the increased mobility which the dragoon system is supposed to have conferred upon them. The problem as to what shall be done with the remaining 26 brigades which are borne on the strength of the British Army is accordingly but little nearer solution than before. He adds that the principal test of the new organization was made on the opening day of hostilities, when the brigade allotted to Westland was employed with the Cavalry Division and Mechanized Infantry Brigade sent forward as a specially mobile force to seize the line of the Test near Whitechurch. The operation was, however, characterized by no greater speed than could have been attained had both Infantry and Artillery had their old organization, and therefore nothing of much use was learned."

"Cavalry speed could, it is held, have made the first delaying action well east of the Test, but perhaps in that case six days of maneuvers would have been necessary for the contesting of each delaying position."

One lesson of the maneuvers, according to the Daily Telegraph, which affects the mobile arms as well as Infantry, is the almost insuperable problem of handling an army of which each fraction moves at a different pace. The mobile forces were not as effective as they might have been, declares the Telegraph, because their components were so various. Research must be speeded up—money cannot be better spent at present, in order that simplification and standardization can be attained.

NEW FEDERAL REGIMENTAL FLAG FOR NAT. GUARD



THIS is the new regimental flag of the 71st Infantry, N.Y.N.G., Col. W. A. DeLamater. It is believed to be the first picture of the new regimental flag which the Federal Government has authorized for the National Guard. The coats of arms and crests on the various flags will differ according to the State to which the organizations belong. The National Guard of the State of New York is represented by the crest containing the full-rigged ship Half Moon, and the 71st Infantry is represented by the shield on the eagle's breast and the motto above.

C. M. T. C. THIS YEAR BROKE ALL RECORDS.—According to an official War Department report the Citizens Military Training Camps, now in its fifth year, broke all records this Summer both for attendance and for the number of camps held throughout the country.

That the camps meet with popular favor throughout the country is shown by the fact that 57,000 applications were received, of which 34,000 youths, the largest number since the C.M.T. Camps were started, spent 30 days under outdoor training at 40 different camps. The report states that more than one-third of the students at this year's camps were advanced candidates and graduates of previous camps.

With an enrollment of 4,720, the Seventh corps area, with headquarters at Omaha, Nebr., led all other corps in the number of men trained. Next, with 4,659, was the Second Corps, comprising New York, New Jersey, and Delaware. The Third corps area trained 3,936; the Fifth, 3,801; the fourth, 3,697; the Sixth, 3,567; the Eighth, 3,326; the First, 3,035; and the Ninth, 2,940.

LELAND STANFORD WANTS ORDNANCE R.O.T.C. UNIT.—Leland Stanford University of Palo Alto, Calif., is desirous of establishing a Reserve Officers' Training Corps unit, and has sent Dr. W. J. Crook, of the Department of Engineering, to make a comprehensive reconnaissance of the Ordnance activities at a number of arsenals and proving grounds.

Doctor Crook conferred with officers on duty in the office of the Chief of Ordnance, and spent considerable time studying the procurement organization of the office of the assistant Secretary of War. Before returning to California, Doctor Crook will visit Aberdeen Proving Ground, Md.; Watertown Arsenal; Picatinny Arsenal, Raritan Arsenal, Rock Island Arsenal, and the Pittsburgh Ordnance District Office.

KIND WORDS FROM BROOKLYN EAGLE

THE purchase of the ARMY AND NAVY JOURNAL by J. C. O'Laughlin coincides with an announcement that the air inquiry will be fully covered for the benefit of the Services. The JOURNAL publishes a supplement of the verbatim testimony of the Morrow Commission to date and promises to continue until the commission has completed its investigation. The Army and the Navy need somebody to raise hob with them all the time. It puts generals and admirals on their toes, and that means efficiency at all depots. If the JOURNAL should set out to act as "best pal and severest critic," it would be a great amount of good because the Services listen to its editorials. May it have continued success in its important field.

THE BOSTON AMERICAN WIRES GOOD WISHES

JOHN CALLAN O'LAUGHLIN,

Publisher ARMY AND NAVY JOURNAL, Washington, D. C.:

Congratulations upon the first issues of the ARMY AND NAVY JOURNAL under your leadership, and best wishes for you both for the future.

JAMES T. WILLIAMS, JR.

SERVICE SPORTS

OUT TO TWIST THE TIGER'S TAIL!

Navy Lineup

Hardwick L. E.
 Wickhorst L. T.
 Lentz (c) L. G.
 Osborn C.
 Edwards R. G.
 Eddy R. T.
 Bennett R. E.
 Hamilton Q. B.
 Flippin L. H. B.
 Banks R. H. B.
 Shapley F. B.



Alan Shapley, Fullback



Gus Lentz, Captain



Wickhorst, Star Tackle

Princeton Lineup

Jeffers L. A.
 Darby L. T.
 McMillan L. G.
 Bartell C.
 Baldwin R. G.
 Gates R. T.
 Mooser R. E.
 Caulkins Q. B.
 Bridges L. H. B.
 Slagle R. H. B.
 Gilligan F. B.

NAVY AND PRINCETON SET FOR BATTLE

WHEN Navy and Princeton clash today at Baltimore Stadium, the spectators can expect fireworks on the gridiron. From the records of both teams to date, the Midshipmen have the edge. Whether they can keep it in the game with the Tiger team is the question. In the past, the series between the Naval Academy and Princeton show a distinct Orange and Black flavor despite the fact that several times the Navy was favored to win.

This year the Midshipmen will have to stop Slagle's passes to win. Navy rooters, although expressing admiration for the Tiger passing game, feel sure that Navy can break it up.

"An airtight defense against Princeton's passing game must be maintained to prevent a Tiger score and towards this end the Navy coaches have bent their efforts during the past week," said a naval officer.

Navy has won its first two games this season in impressive fashion. The Midshipmen defeated William and Mary, 25-0, and Marquette, 19-0. The Tigers vanquished Amherst, 20-0, and beat Washington and Lee, 15-6.

Princeton has won three games in the series to date, while the Navy has won one and tied two games. The results since the series started are: 1909, Princeton 5, Navy 3; 1911, Navy 0, Princeton 0; 1920, Princeton 14, Navy 0; 1921, Navy 13, Princeton 0; 1923, Navy 3, Princeton 3; 1924, Princeton 17, Navy 14.

Navy rooters expect a victory by a margin of two touchdowns. If Navy displays the same brand of football as it has recently this is not unlikely.

BALTIMORE BRANCH NAVAL ACADEMY ASSOCIATION HOST AT PRINCETON GAME.—The Baltimore Branch of the Naval Academy Graduates Association has headquarters in Room 1,000 of the Standard Oil Building, St. Paul Place and Franklin Street, Baltimore, Md., in the forenoon of Saturday, October 17, 1925, for the Navy-Princeton football game.

Graduates of the Academy and their friends are invited to make Room 1000 their headquarters for the day. The room will be kept open, with servants in attendance, until after the game, so that packages and wraps may be left by those who are visiting the city.

There is good parking space in the neighborhood, and many may want to leave their cars near the Standard Oil Building and taxi to the game and back. Any of those wishing to make this arrangement can have taxicabs engaged by writing to the committee in advance.

There will be sandwiches, etc., and a welcome for graduates and their friends both before the game and again immediately after it.

QUANTICO MARINES OVERWHELM KINGS COLLEGE 40-0.—The Quantico Marine eleven, which meets Canisius College at Buffalo, N. Y., today, returned to its oldtime form in the Kings College game at Bristol, Tenn., on October 10 and turned the "Red Tornado" into a gentle zephyr before an enthusiastic audience.

Henry, the Quantico fullback, around whom the Marine offensive was built, crashed through the Tennessee collegians for five yards or more every time he tucked the pigskin under his arm. The Marine line was holding so well that it was scarcely ever necessary for the backfield defense to help them. The fighting spirit of the Kings College eleven was the only thing that kept the score down to two figures.

The Quantico Marine line-up was: Broughen, l. e.; Wigmore, l. t.; Crowe, l. g.; Bailey, c.; McHenry (captain), r. g.; Burger, r. t.; Stock, r. e.; Beunelle, q. b.; Groves, r. h. b.; Pugh, l. h. b., and Henry, f. b.

TANK SCHOOL BEATS ABERDEEN, 41-0.—The Tank School eleven, with John Miller starring, defeated Aberdeen Proving Grounds, 41-0, at Camp Meade, Md., on October 10. Outweighed, the Aberdeen players put up an aggressive battle. Hodson and Isham, Tank School backs, played a brilliant game.

ARMY FACES FIRST BIG TEST IN TILT TODAY

THE ARMY is facing Notre Dame at the Yankee Stadium, N.Y.C., in the first big test of the year today. There is a strong feeling among Army rooters that when the Cadets leave the field this year it will be as victors. Coach McEwan has not made any claims or predictions.

The Corps of Cadets are not attending the game, due to the fact that three trips, Columbia, Yale and Navy, are the only one authorized. A big rally held on October 15, prior to the football eleven's departure from the Military Academy, showed that the spirit of the corps is behind the team and has given the team an excellent spirit and morale.

Army has beaten Detroit, 31-6, and took Knox into camp last week, 26-7. Rockne's proteges overwhelmed Baylor University, 41-0, and snatched a victory from Beloit, 19-3. Although minus his famous "four horsemen," who played so big a part in Army's defeat last year, Rockne has a team already highly rated in the Middle West, which is noted for strong elevens. Many experts think the contest this afternoon will result in a tie. Others pick Army to win by a touchdown.

The discovery of Buell and Gilbreth, especially the former, absolutely insures McEwan two fine sets of backs, both of which will probably get into action today. Good substitutes for the line are still scarce. The most likely appearing ones are Landon, center; Heiser and Hammack, guards; and Elias and Perry, tackles. Besides these men Conner, at tackle, also seems good.

Other good line substitutes are practically an unknown quantity. With the removal of Gilbreth from end to back, Harbold, Nave and Davidson are first choices as relief men for Baxter and Born at ends.

This leaves the second backfield, consisting of Yeomans, Buell, Gilbreth and Scheffler (if he is able to play, otherwise Hall, probably) as a very fine reserve backfield, and one which McEwan will probably use.

If the Army's first team can hold up for the whole game, the prospects for a victory will be greatly enhanced. If the game develops the need for many substitutes, the Army might find itself in a serious hole.

Notre Dame has such a supply of good backs that Prelli, Flannigan, Dahman or Roach may start the game. Hanousek may start at full and Scharer at quarter. Rockne has not decided on his first choice, but he will have a backfield that will give as good an account of itself as the famous "Four Horsemen" of last year.

The "C" squad will play the New York Military Academy at the Stadium at West Point. The returns from the Notre Dame game will be received and shown on a "Grid-graph" in the gymnasium after the conclusion of the "C" squad game.

The "C" football squad is composed entirely of Plebes. They made a very creditable showing in the opening game against the New York University Freshmen, losing by the score of 10 to 0. Zimmerman played the best game for the "C" squad.

The line-up was as follows: Cune, l. e.; Muse, l. t.; Humber, l. g.; Wimer, c.; Dwyer, r. g.; Blackwell, r. t.; Brownlee, r. e.; Fagg, q. b.; Lovell, h. b.; Zimmerman, h. b.; Foster, f. b. Cadet Parker is manager of Football.

FT. HOWARD GRIDDERS AMBITIOUS.—The Ft. Howard football eleven, coached by Sam Conley, has undertaken an ambitious schedule, which consists mostly of interservice games for the northern district championship of the 3d Corps Area. All contests will be played at Ft. Howard except the Carlisle Barracks. Their schedule is as follows: October 17, Aberdeen; October 24, Dundalk; October 31 Carlisle Barracks (at Carlisle); November 7, Tank School; November 14, Ft. Hoyle.

The team will probably line up during the season as follows: Petrowski, right end; Beisel, right tackle; Smith right guard; Robinson, center; Cruise, left guard; Bearer, left tackle; Yokul, left end; Harris, quarterback; Russell, right halfback; Reynolds, left halfback, and Kuba, fullback.

(Further Sports News on page 162)

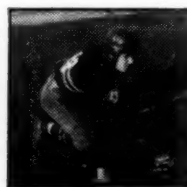
ANXIOUS TO TACKLE NOTRE DAME

Army Lineup

Baxter L. E.
 Sprague L. T.
 Schmidt L. G.
 Daly C.
 Seeman R. G.
 Saunders R. T.
 Born R. E.
 Harding Q. B.
 Trapnell L. H. B.
 Wilson R. H. B.
 Hewitt F. B.



Cadet Baxter, Captain



Gilbreth, who may play back



Harry Wilson, Star Back

Notre Dame Lineup

Crowe L. E.
 Boland L. T.
 Marelli L. G.
 Maxwell C.
 Mayer R. G.
 McManiman R. T.
 Wallace R. E.
 Edwards Q. B.
 O'Boyle L. H. B.
 Hearndon R. H. B.
 Enright F. B.

N. G., RESERVE NEWS AND ARMY RETIREMENTS

DEFINES STATUS OF MEDICAL DEPT. N. G. DETACHMENT OFFICERS.—An announcement has been made by Maj. Gen. Creed C. Hammond, chief of the Militia Bureau, defining the status of medical officers carried with medical department detachments in National Guard Tables of Organization.

Captains and lieutenants of the Medical Department carried in National Guard Tables of Organization under "Medical Department Detachment" are officers "not belonging to organizations" in contradistinction to officers of companies, troops, batteries, and detachments, and are paid accordingly under provisions of section 109, National Defense Act, and applicable National Guard regulations, for the satisfactory performance of appropriate duties.

The commanding officer of an organization having a Medical Department detachment will detail one of the medical officers to command the Medical Department detachment. Should the detachment be organized at two or more stations he will detail a medical officer to command the part thereof at each station. In the latter case the senior officer in command of any of the parts will also be in command of the detachment. The field officer carried in the Medical Department detachment may be detailed to command the detachment and one of the parts, when divided.

ORGANIZED RESERVE

NEW ENGLAND RESERVE OFFICERS PASS RESOLUTIONS IN SUPPORT OF ADEQUATE NATIONAL DEFENSE.—The largest Reserve Officers' Association meeting in New England, and one which was of considerable importance, was that of the departments of Maine and New Hampshire, who united in a convention a few days ago at Poland Spring, Me. Over 300 members attended, many of them bringing their wives.

Resolutions were passed setting forth that if the 1927 Budget estimate is accepted by Congress, it means drastic reductions in the personnel and operations of the Army, making it impossible for it to carry out the provisions of the National Defense Act. Resolutions were passed also to the effect that the present economy forces students of the C.M.T.C. to wear clothing below a fit standard; that horses for the mounted branches of the Service have reached the age of 15 to 20 years, and are nearing the limit of their efficiency.

Other resolutions passed were as follows: That the value allotted the Army ration does not provide proper subsistence; that 40,000 men are living in rickety frame wartime cantonments; that there are not enough gas masks to equip the Regular Army and none for the National Guard and Organized Reserves; and that there are not sufficient weapons in our war stocks, nor facilities for the proper defense of the Panama Canal. The resolutions urged that sufficient funds be provided by Congress to maintain the present authorized strength of the Regular Army; that the value of the ration be increased by at least 10 cents a day; and that adequate quarters be provided for the officers and men of the permanent forces. Copies of the above resolutions are to be sent to all members of Congress representing the New England States.

The reunion was made the occasion for the separate annual conventions of those two departments, at which officers were elected for the coming year. The Maine Department of the association elected the following officers for the coming year: President, Col. F. E. Gignoux, FA-Res, Portland; vice-presidents, Lt. Col. Sabine W. Wood, Inf-Res, Bangor, and Col. F. H. Farnum, Inf-Res, Augusta; secretary, Capt. T. K. Thurston, Inf-Res, Portland; treasurer, Col. T. J. Burrage, Med-Res, Portland.

The following officers were elected by the New Hampshire Department: President, Capt. J. O. Lovejoy, Inf-Res, Bristol; vice-president, Lt. W. H. Hildreth, Inf-Res, Houghton; secretary, Lt. J. W. Dole, Inf-Res, Bristol; treasurer, Lt. Col. Alcott Elwell, Inf-Res, East Hampden.

Among the prominent speakers were Gen. John Ross Delafield, Senator Hiram Bingham, and Col. M. R. Hilgard, U.S.A. General Delafield, in the course of some remarks, outlined the National Defense measures necessary for the country, and which it was urged that the Reserves support unitedly. Colonel Hilgard made an able presentation of the industrial requirements in case of a major war. Senator Bingham, while expressing the necessity of economy in appropriations, told members that he favored an adequate National Defense, and the present organization of the Army of the United States, and was against any further reductions. Col. Henry G. Beyer, Inf-Res, spoke on "National Preparedness."

RESERVE OFFICERS OF WISCONSIN ADOPT IMPORTANT RESOLUTIONS.—The annual convention of the Wisconsin Department of the Reserve Officers' Association of the United States, held recently at Eau Claire, resulted in the adoption of a number of important resolutions affecting the welfare of the Army of the United States.

The resolutions, which were adopted without dissent, were the following: Endorsing the plan of cooperation between this Association and the C.M.T.C. Association as worked out by the Committee on Cooperation.

Condemning proposed reduction in Budget of the Army and ordering copies of this action sent to Wisconsin delegates in Congress, the chairman of the House and Senate Military Committees and the President of the United States.

Recommending to Congress the passage of a proposed selective service law as worked out by the Legislative Committee of the American Legion.

Urging larger appropriations for the C.M.T.C. so that at least 50,000 candidates can be trained annually.

Urging the continuance of Defense Test Day, with a recommendation that it be held some time during the month of May annually.

Recommending establishment of a summer contact camp in the southern part of Wisconsin.

Recommending removal of restrictions on promotion in the Reserve Corps of non-commissioned officers in the Regular Army.

Requesting the Commanding General of the 6th Corps Area to publish the calendar for training for the Summer of 1926 by January 10, 1926.

Requesting the Corps Area Commander to establish the month of August as the period for the C.M.T.C. camp for Wisconsin candidates.

The following officers were elected: President, Major Boardman, Oshkosh; first vice-president, Maj. George Simpson, Eau Claire; second vice-president, Lt. G. A. Chandler, Madison; third vice-president, Maj. William J. Holzapfel, Racine; treasurer, Lt. Ira M. Jones, Milwaukee.

Directors: (two years) Lt. Col. Garrit DeHeus, Milwaukee, and Lt. Col. W. E. Haseltine, Ripon; (one year) Maj. E. N. Webster, River Falls, and Capt. R. P. Boyd, Eau Claire.

The following delegates and alternates to the 1925 National Convention, to be held at Milwaukee, September 10 and 11, were elected:

Delegates: Majs. Henry B. Nelson, Milwaukee; Charles I. Corp, Madison; Fred C. Best, Milwaukee; Robert P. Boardman, Oshkosh, and Lt. Col. Stephen A. Fark, Milwaukee.

Alternates: Lt. Stanley A. Staidl, Roz River; Maj. A. G. Hovde, Superior; Capt. Fred W. Armitage, Green Bay; Capt. Alfred J. Rasmussen, La Crosse, and Lt. E. A. Longenecker, Beloit.

The convention was addressed by Lt. Col. W. B. Graham, of Chicago, organizer of the Military Intelligence Association of that city, and Col. Girard Sturtevant, of Milwaukee, Chief of Staff of Division 101 and State Liaison Officer; also by Col. William L. Reed, executive officer at Eau Claire; Major Atkinson, Spanish War veteran, and Captain Henry, Civil War veteran.

ARMY RETIREMENTS

MAJ. GEN. WILLIAM H. JOHNSTON, U.S.A., TO RETIRE OCTOBER 19.—Another notable general officer of the Army of distinguished service, who is due to retire for age is Maj. Gen. William H. Johnston, U.S.A., who has been on duty at Camp Lewis, Washington. He will be placed on the retired list on October 19, 1925, and is the last officer of the Army to retire for age this year.

General Johnston was born in Ohio October 19, 1861, and entered the Regular Army from civil life as a second lieutenant, 16th Inf., October 10, 1883. He served in the Cuban and Porto Rican campaigns, the Philippine Insurrection, and with the A.E.F. in the World War. He was awarded the D.S.C. "for extraordinary heroism in action northwest of Verdun, France, September 27 to 30, 1918. He repeatedly showed exceptional bravery during the Argonne-Meuse offensive, frequently visiting his front lines under heavy fire from enemy artillery, machine guns and snipers, displaying marked coolness and inspiring the members of his command with confidence and determination." He was awarded the D.S.M. for "exceptionally meritorious and distinguished services. During the Argonne-Meuse offensive he commanded with skill and ability the 91st Division in the difficult advance that resulted in the taking of Epinonville. Later, in participation with the French, he led his division with marked distinction in the attack on and capture of the important city of Audenarde in the closing operations of the war in Belgium." General Johnston was also awarded the Belgian Order of Leopold, French Legion of Honor and French Croix de Guerre with two palms.

MAJOR GENERAL DUNCAN RETIRES.—Maj. Gen. George B. Duncan, U.S.A., was placed on the retired list on October 10, 1925, on account of the age limit of 64 years. He has had a distinguished record of service. General Duncan was born in Kentucky, October 10, 1861, and was graduated from the U.S.M.A., in the class of 1882, when he was assigned to the 9th Infantry. He has had a large field experience with troops on the plains, in Cuba, the Philippines and in China during the Boxer rebellion, and in the World War. He was sent to France with General Pershing and was the first American officer to be decorated with the French War Cross.

During the World War General Duncan participated in the Oisne-Aisne defensive and in the Meuse-Argonne offensive. He successively commanded the 26th Infantry, the 1st Brigade of the 1st Division, the 77th Division, and the 82d Division, being awarded the Distinguished Service Medal by our Government, the Order of the Bath (Companion) by Great Britain, and the Legion of Honor (Commander) and the Croix de Guerre (with palm) by France.

During the Spanish-American War he participated in the campaigns of Santiago and Puerto Rico, and in numerous engagements during the Philippine Insurrection, being recommended in both instances for brevet of captain. General Duncan, among many other duties, has served on the General Staff, with the Philippine Scouts and with the Hawaiian Militia. He was last in command of the 7th Corps Area, with headquarters at Omaha.

Acting Secretary of War Davis, in a letter to General Duncan just before his retirement, extended the thanks of the department for his "military accomplishments, both in war and in peace." "Your peacetime service has been equally successful," Mr. Davis wrote. "While commanding the 7th Corps Area you have furthered the interest of the Service, and have made a host of friends in that locality, not only for yourself personally but for the Army."

RETIREMENT OF MASTER SGT. JOHN F. DONOVAN.—Master Sgt. John F. Donovan, D.E.M.L., U.S.A., was retired from active service at Omaha, Nebr., October 1, 1925, after long and efficient service. He first enlisted in the Regular Army in the 7th Cavalry, February 20, 1902, and subsequently served in the 1st, 2d, 7th, 8th, 13th and 315th Regiments of Cavalry, the 7th and 36th Infantry, the 75th and 83d Field Artillery, in the General Service Infantry, and on the D.E.M.L. During his service he was on duty at Cuba during the first occupation, took part in the Huerta Expedition at Vera Cruz, Mexico, and served seven years in the Philippines. During the World War he served as a captain with the 36th Infantry, 315th Cavalry and 71st and 83d Field Artillery.

RETIREMENT OF MASTER SGT. WALTER A. GILTNER, U.S.A.—In a special order issued from the R.O.T.C., Headquarters of the Culver Military Academy, Culver, Ind., Col. George D. Arrowsmith, U.S.A., commanding, in announcing the retirement says:

"The record of Sergeant Giltner is as follows: First enlisted in Company C, 13th Infantry, September 26, 1898. His service as an enlisted man continued almost unbroken until 1917, when he was discharged as 1st sergeant. He was commissioned a 2d lieutenant of Infantry and served through the War as an officer, being discharged a 1st lieutenant in 1919. He came to Culver in 1920 and has served here since that time, rising to the grade of master sergeant, the highest grade obtainable as an enlisted man."

U. S. NAVY, MARINE CORPS AND COMPONENTS

UNITED STATES NAVY

NAVY DEPARTMENT ISSUES INSTRUCTIONS FOR RAISING S-51.—Instructions were issued this week by Rear Adm. C. P. Plunkett, U.S.N., commandant of the 3d Naval District and the New York Navy Yard, which has been awarded the contract to salvage the S-51, relative to raising the submarine by pontoons. In addition to the existing facilities in this district and at the navy yard, which will be used in the operation, the U.S.S. Vestal, the U.S.S. Falcon, and the S-50 will be detached from their present duties and ordered to the 3d Naval District in connection with this work.

Capt. E. J. King, U.S.N., commander of the submarine base at New London, has been designated to be in charge of the combined forces, afloat and of the navy yard on the scene, while Lt. Comdr. E. Ellsberg, (C.C.), U.S.N., assisted by Lt. P. Lemler (C.C.), U.S.N., will have charge of the salvage operations and will be charged with the technical considerations in connection therewith. As the S-51 is to be raised by pontoons, the Norfolk Navy Yard has been instructed to ship four pontoons to New York, while six additional pontoons and such other equipment as is required will be manufactured by the New York yard.

After being fitted with the necessary equipment at the New York yard, and pending delivery of the actual pontoons, the U.S.S. Falcon, under the direction of Lt. H. Hartley, U.S.N., will proceed to the scene of the disaster to plant mooring buoys, pass messenger lines for the pontoons, and do all possible preliminary work of sealing up compartments and preparing for the lowering of the pontoons when delivered and the necessary pumping and blowing operations thereafter.

The U.S.S. Vestal, Capt. W. V. Tomb, U.S.N., commanding, has been designated to act as the base ship at the scene of operations. This vessel will proceed to the New York yard and will take aboard such equipment as is required.

The diving operations will be handled by Navy divers and will be assembled from the torpedo station, from the fleet, and probably other stations. Chief Gunner Tibbals, U.S.N., will have technical supervision of the operations under the sea.

In concluding his instructions Admiral Plunkett pointed out that it is essential that the S-51 be raised in order that the bodies of the men who went down with her may be recovered, and owing to the advancing winter season, the operations should be expedited.

U.S.S. PITTSBURGH GETS WARM WELCOME IN IRELAND.—Mail advices received by the ARMY AND NAVY JOURNAL relative to the visit a few weeks ago to Irish ports of the U.S.S. Pittsburgh, flagship of Vice Adm. Philip Andrews, commanding the U. S. Naval Forces in Europe, tell of the warm welcome and hospitality the officers and men of the Pittsburgh received from the Irish people. After the visit of the warship to Kingston, Admiral Andrews, in a letter to Governor General Healy, of the Irish Free State, expressed his "deep and grateful appreciation" for the constant kindness shown to officers and men. "May you live long and prosper with your country which you love so well and for which you have done so much," said Admiral Andrews in conclusion.

At Belfast the officers and men received another splendid welcome. The Lord Mayor and the citizens' committee entertained some 400 officers and men at a dinner and concert. A special invitation was extended to the officers and crew of the Pittsburgh by the Queen's Island Amateur Swimming Club to attend a gala at the Waterworks. Men from the Pittsburgh competed in a special 50-yard race for a cup presented by the club, and a diving exhibition was given by Petty Officer Rowe, champion of the Pittsburgh. Visits were made to various points of interest.

In a visit to Dublin and vicinity during a trip to Dun Laoghaire, the cordiality shown was very marked, and numerous invitations, entertainments and opportunities to see the country were afforded the officers and men, but very markedly so was cordiality shown in the individual greetings of welcome given by the citizens generally.

The Pittsburghers had a unique opportunity of seeing the great Dublin Horse Show—the clubs and other associations extended their hospitality generally; and the Army of the Irish Free State was particularly kind in arranging transportation for the officers to and from the numerous functions and in arranging char-a-banc trips for large numbers of the men to see the different sights in and about Dublin.

In a letter of appreciation to the Irish Times for kindnesses shown the officers and men on visits ashore, Admiral Andrews said in conclusion: "The kindness and hospitality we received were quite overwhelming, and plainly came direct from the warm hearts of the Irish people. This has been fully recognized by all the personnel of the Pittsburgh, and very deeply appreciated."

U. S. NAVY BAND ON A CONCERT TOUR.—Under the direction of W. L. Radcliffe, the U. S. Navy Band, Lt. Charles Benter, U.S.N., leader, has left Washington on an eight weeks tour through the Atlantic Coast and Southern States. The band gave its first concert at Petersburg, Va., on October 12, and followed this up with a musical program in the various towns of Virginia until October 17. The band will then visit North Carolina, South Carolina, Georgia, Alabama, Mississippi and Louisiana. New Orleans will be the only point in Louisiana where the naval bandmen will give a concert, and this will be on November 15. After the rendition of this program, the band will begin its homeward journey to Washington, making stops en route in Mississippi, Alabama, Georgia, South Carolina and North Carolina. The band will arrive back in Washington the early part of December.

NAVY J.A.G. OPINIONS.—An accused was tried by general court-martial on a charge of "Threatening to assault his superior officer while in the execution of the duties of his office," the supporting specification alleging that the accused said to his superior officer, "You ain't going to get away with this any longer." Held: This specification does not contain a threat to assault his superior, as an assault is an unlawful offer or attempt with force or violence to do a corporal hurt to another. The mere fact that he made this remark, without further allegations of the circumstances surrounding the making of these remarks, does not necessarily mean that the accused had corporal injury in mind.

THE SHENANDOAH INVESTIGATION.—The main features of the testimony given the past few days before the court of inquiry at Washington, to determine the facts concerning the wreck of the Navy airship Shenandoah, were the following:

Changes made in the gas cell installation on the Shenandoah were declared unsafe by Lts. R. G. Mayer and C. E. Bauch, U.S.N. Both added, however, that with a crew as skilled as that of this airship, the alterations were not necessarily dangerous.

Comdr. Garland Fulton, who approved the change, said the total gas valve capacity was reasonable, but that he would have preferred to have more of it in the automatic instead of the maneuvering or hand valves.

Adm. E. W. Eberle, chief of naval operations, told the court that Comdr. Zachary Lansdowne, captain of the Shenandoah, had wide discretionary power in operation of his ship and that he was willing to make the mid-Western flight last July.

Capt. G. S. Lincoln told the court that one of the purposes of the mid-Western flight was to test the mooring mast which had been erected by Henry Ford at Dearborn, Mich.

Both Dr. Greig and Dr. W. J. Humphreys, both of the Weather Bureau, told the board that the weather signs discernible to the officers of the Shenandoah furnished no warning of an immediate dangerous situation.

CHANGE IN NAVY REGULATIONS FOR SHORE STATION CAP RIBBONS.—The following change in Navy Uniform Regulations, 1922, relative to cap ribbons for enlisted men on shore stations, has been approved by the Secretary of the Navy, and is published in advance of its issue as a printed change in the Uniform Regulations. On page 51, paragraph 325, subparagraph "Cap Ribbons," seventh line after "ribbon," add the following:

"Enlisted men attached to shore stations will wear the following designations on their cap ribbons:

"Navy Recruiting Service." (For all personnel in Recruiting duty.)

"U. S. Naval Training Station." (For all personnel on duty at training stations, including those in Service Schools and under recruit instruction.)

"U. S. Naval Hospital." (For the operating force in the complement of all naval hospitals. Patients not to be required to change cap ribbons.)

"Submarine Base." (For all personnel attached to a base, including crew of tender and those under instruction.)

"The Receiving Ship." (Operating force in the complement of all Receiving Ships and Barracks. Men on general detail not to be required to change cap ribbons.)

"U. S. Navy Yard." (All personnel attached to a Navy Yard but not attached to a yard craft on the Navy list.)

"Naval Communication Service." (All personnel detailed to communication activities ashore not attached to a yard craft.)

"Naval Ordnance Plant." (All personnel attached to ammunition depots and ordnance plants.)

"U. S. Naval Torpedo Station." (All personnel attached to a torpedo station except those attached to a yard craft on the Navy list.)

"U. S. Naval Air Station." (All personnel attached as complement of an air station, including the complement of air squadrons permanently based thereon.)

"U. S. Naval Academy." (All personnel attached as complement of the Naval Academy except the crew of the station ship.)

Stations will continue issue of the present ribbons until the stock is exhausted.

NOTES FROM THE BUREAU OF OPERATIONS, NAVY DEPARTMENT.

The date of completion of the Oklahoma at the Bremerton yard has been extended to November 7.

The U.S.S. Henderson will make a trip to San Francisco from the East Coast and return by Christmas.

The home yard of the Seattle has been changed from Bremerton to New York—she is expected to arrive on the East Coast by November 9.

The question of complaints in regard to low scores in engineering competition has been referred to, the complaints being that the allowances were too low. In the auxiliary class the competition had resulted in a reduction of fuel close to 30 percent.

The disposition of the hulk of the old battleship Massachusetts, which had been turned over to the Army and sunk at Pensacola, was brought up. The Navy had put her up for sale but there were no bids. The vessel is buoyed, as she is a possible danger to navigation.

NAVY PROMOTION ELIGIBILITY.—The following-named officers, it was announced by the Navy Department on October 14, became due for promotion to the next higher grades from the dates indicated: September 26, 1925, Lt. (J.G.) Clayton S. Isgrig; September 29, 1925, Lt. Hugh G. Eldredge, Lt. (J.G.) Philip R. Kinney; October 1, 1925, Lts. (J.G.) Orville G. Cope, Jr., John A. McDonnell; October 4, 1925, Comdr. Frank C. Martin, Lt. Comdr. James C. Van de Carr, Lt. Edward E. Hazlett, Jr., Lt. (J.G.) James A. Crocker; October 9, 1925, Lt. (J.G.) Harold Coldwell.

U.S.S. ASHEVILLE AND SACRAMENTO LEAD IN ENGINEERING PERFORMANCES.—The following is the standing of the highest of vessels in the gunboat class in the United States Navy in Engineering Performances for the months of July and August, 1925:

July.—(1) Asheville, (2) Sacramento, (3) Isabel, (4) General Alava, (5) Tulsa, (6) Scorpion, (7) Mayflower, (8) Elcano, (9) Helena, (10) Eagle No. 58.

August.—(1) Sacramento, (2) Isabel, (3) General Alava, (4) Tulsa, (5) Asheville, (6) Scorpion, (7) Mayflower, (8) Elcano, (9) Eagle No. 47, (10) Helena.

(Further Navy News is on page 162)

COMPTROLLER GENERAL DISALLOWS CLAIM OF LT. L. D. SCHULZE, U.S.A.—The claim of Lt. L. D. Schulze, A.S., U.S.A., for \$400 for various expenses he incurred in preceding the round-the-world flyers to make some necessary arrangements for them, has been disallowed by Comptroller General McCarl.

Lieutenant Schulze submitted the expenditures on the approved War Department form, which certified that the "above articles have been received by me in good condition and in the quality and quantity above specified," and that no "unreasonable" prices had been charged. He also attached a memorandum to the effect that it was obviously impossible for him to get receipts for the expenditures and that in the short time in which he had for his work he had to entertain representative people of the countries which he visited.

ORDERS FOR THE NAVY

Commander-in-Chief—Calvin Coolidge, President
Secretary of the Navy—Curtis D. Wilbur
Assistant Secretary of the Navy—T. Douglas Robinson
Chief of Naval Operations—Admiral E. W. Eberle

October 7, 1925

Lt. Comdr. O. C. Badger to U.S.S. Maryland; H. P. Le Clair to aide on staff, Comdr. in Chief, Battle Flt.; C. E. Rosendahl to Nav. Air Sta., Lakehurst, N. J.

Lts. S. H. Campman to Nav. Aviation Reserve Unit, Sand Point, Wash.; M. W. Hutchinson to Bu. Eng.; F. Meyer to continue treatment Nav. Hosp., L. I., Phila., Pa.

Lts. A. C. Steinbrenner to home and wait orders; A. C. Thomas to dist. Commun. Officer, 12th Nav. Dist.

Lts. (j.g.) A. J. Homann to U.S.S. S-3; V. E. Kerns to Naval Academy.

Ens. P. C. Crosley to temporary duty, under instr. Naval Communications, Naval Operations, Navy Dept.

Lt. F. M. Moxon (M.C.) to Nav. Hosp., San Diego, Calif.

Lt. (j.g.) J. M. Beall (M.C.) to navy yard, Norfolk, Va.

Lts. (j.g.) E. T. Cure (M.C.), H. W. Gillen (M.C.), C. D. Middlestadt (M.C.) and G. C. Thomas (M.C.) to Port au Prince, Haiti.

Comdr. I. T. Hagner (S.C.) to continue treatment, Nav. Hosp., Puget Sound, Wash.; Lt. Comdr. H. C. Shaw (S.C.) to dist. office, navy yard, Puget Sound, Wash.

Lts. H. H. Bloxham (S.C.) to U.S.S. New York; R. H. Mattox (S.C.) to Rec. Bks., Hampton Rds., Va.; M. McCray (S.C.) to settle accounts.

Comdr. J. W. Woodruff (C.C.) to Bu. C. & R. Comdr. C. H. Ripley to U.S.S. Quail.

Ch. Machs. A. W. Bird to Bethlehem Shipbuilding Corp., Quincy, Mass.; H. A. Bryan to Rec. Ship, San Francisco; F. C. Wolf to U.S.S. Omaha; E. L. Bourke to 5th Nav. Dist.

Ch. Carps. G. R. Arey to Rec. Bks., Hampton Rds., Va.; B. B. Britt to Nav. Torp. Sta., Newport, R. I.; L. T. Herrmann to U.S.S. Oklahoma; J. Reid to navy yard, Portsmouth, N. H.

Pay Clks. G. Boer to Nav. Sta., Guam; S. F. Everett to U.S.S. Arctic; A. M. Ruston to 16th Nav. Dist.

October 8, 1925

Lt. Comdr. H. S. Jeans to U.S.S. Tennessee; J. L. Karley to U.S.S. Omaha.

Lts. H. Bye to Rec. Ship, San Francisco; T. DeW. Carr to aide and flag lieutenant on staff, comdr., Battleship Division 3; J. J. Cotter to U.S.S. Whitney; R. M. Cottrell to Rec. Ship, San Francisco; Lt. C. Halverson to Navy Mine Depot, New London, Conn.

Lts. M. Monssen to home and wait orders; M. A. Thormahlen to command Nav. Air Sta., Cape May, N. J.; R. S. Savin to 16th Nav. Dist.; G. E. Twining to Naval Ammun. Depot, navy yard, Puget Sound, Wash.

Lts. (j.g.) T. C. Brownell to treatment, Nav. Hosp., New York; C. A. Atkinson, Jr., to U.S.S. Pennsylvania; J. F. French to Nav. Operations, Washington, D. C.; L. R. Reiter to U.S.S. Milwaukee.

Ens. W. E. Lankenau to U.S.S. Henshaw; C. W. Oexle to continue duty U.S.S. Oklahoma; W. P. E. Wadbrook to Naval Academy.

Lts. J. B. Bostic (M.C.) to Dist. Sqdns., Battle Fleet; H. G. Cannon (M.C.) to Nav. Hosp., Newport, R. I.; R. H. Jenkins (M.C.) to obs. and treat., Nav. Hosp., Washington, D. C.

Lts. (j.g.) R. K. Y. Dushinberre (M.C.) to 16th Nav. Dist.; R. M. Harris (M.C.) to U.S.S. Florida.

Lt. Comdr. G. H. Reed (D.C.) to navy yard, Puget Sound, Wash.

Lt. F. J. Long (D.C.) to U.S.S. Arizona.

(Continued on page 165)

U. S. FLEET

Admiral S. S. Robison, Commander in Chief, U.S.S. Seattle (flagship), at San Diego

CORRECTED TO OCTOBER 13, 1925

Address mail for all vessels in Pacific waters to Pacific Station via San Francisco, Calif.; vessels in Atlantic and European waters in care of Postmaster, New York City.

BATTLE FLEET

Adm. C. F. Hughes ordered as commander in chief, California (F.), to Bremerton.

Battleship Divisions

Vice Adm. R. H. Jackson, Commander. West Virginia (flagship), Arizona, Colorado, Idaho, Maryland, Mississippi, New Mexico, Nevada, Pennsylvania, Tennessee, at San Pedro, Calif.; Oklahoma at Bremerton, Wash.

Destroyer Squadrons.—Altair, Chase, Corry, Decatur, Doyen, Farragut, Farenholt, Hull, John F. Burns, Kennedy, Litchfield, Macdonough, McCawley, McDermut, Marcus, Melville, Melvin, Meyer, Moody, Mullany, Paul Hamilton, Reno, Robert Smith, Shirt, Sloat, Selfridge, Somers, Stoddert, Sumner, Thompson, Wood, William Jones, Yarborough, Zeilin, at San Diego, Calif.; Henshaw, Sinclair, San Pedro; Farquhar, Omaha, Percival, Bremerton, Wash.; La Vallette, San Francisco; Kidder, Mervine, Mare Island.

Aircraft Squadrons.—Arrostook, at San Pedro; Langley, Gannet, at Mare Island, Calif.

Submarine Divisions.—R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20, at Pearl Harbor, T. H.

Savannah (tdr.), S-28, S-29, S-33, S-24, S-25, S-27, at San Diego, Calif.

S-4, S-6, S-7, S-8, S-9, S-14, S-15, S-16, S-17, S-26, at Mare Island, Calif.

Argonne, at Mare Island, Calif.; V-1, V-2, at Portsmouth, N. H.

BASE FORCE

Rear Adm. George R. Marvell, Commander. Procyon (F.), at San Pedro.

Mine Squadron 2.—Burns, Ludlow, Tanager, Whippoorwill, Hawaiian waters.

Train Squadron 1.—Antares, at Guantanamo; Brazos, at New York; Bridge, at Hampton Roads; Mercy, to Guantanamo; Vestal, to Norfolk.

Train Squadron 2.—Arctic, at Mare Island; Cuyama, at San Pedro; Kanawha, at Mare Island; Medusa, at San Pedro; Relief, Neches, at San Diego.

FORCES IN ATLANTIC

SCOUTING FLEET

Vice Adm. J. S. McKean, Commander.

Battleship Division

Utah, New York, Wyoming, Guantanamo; Arkansas, at Philadelphia, Pa.; Florida, at Boston, Mass.; Texas, at Norfolk, Va.

Light Cruiser Divisions.—Cincinnati, Detroit, Marblehead, Memphis, Milwaukee, Raleigh, Richmond, Trenton, at Gonaives Bay, Haiti.

Destroyer Squadrons.—Concord (F.), Bainbridge, Barker, Billingsley, Borie, Breck, Childs, Converse, Dallas, Dale, Dobbin, Flusser, Gilmer, Coff, Hopkins, Hatfield, Humphreys, Isherwood, Reuben James, J. B. Edwards, Kane, King, Lawrence, Lardner, McFarland, Overton, Put-

nam, J. K. Paulding, Reid, Sands, Sharkey, Toucey, Smith-Thompson, Whitney, Whipple, Williamson, at Gonaives, Haiti; Case, Tracy, Norfolk, Barry, Brooks, New York Yard; Worden, Philadelphia; Sturtevant to Guantanamo.

Aircraft Squadrons.—Wright, at Norfolk, Va.; Patoka, to Port Arthur; Sandpiper, at Hampton Roads, Va.; Teal, at New York, N. Y.

CONTROL FORCE

Rear Adm. H. H. Christy.

U.S.S. Camden (F.), at New London.

Mine Squadron 1.—Shawmut, Annapolis; Maury, Mahan, Lark, Mallard, at Boston, Mass.

Submarine Divisions.—N-1, N-2, N-3, R-22, S-1, S-3, S-49, at New London, Conn.; S-50, New York; Bushnell (F.), S-10, S-13, at New London, Conn.; S-11, S-12, at Portsmouth, N. H.; S-18, S-20, at New London; S-19, S-21, S-22, S-23, at Portsmouth, N. H.; O-1, O-2, O-3, O-7, O-8, O-9, O-10, O-4, O-6, at Coco Solo, C. Z.; S-43, at Balboa, C. Z.; S-44, S-45, S-42, S-46, at Coco Solo, C. Z.; S-47, at Portsmouth, N. H.

U. S. ASIATIC FLEET

Adm. T. Washington, Commander in Chief.

Flagship, Huron.

Send mail to Asiatic Station via Postmaster, Seattle, Wash.

Abarenda, at Amoy; Asheville, at Hongkong; Elcano, at Ichang; Gen. Alava, Isabel, at Shanghai, China; Jason, at Olongapo, P. I.; Huron, at Shanghai; Monocacy, at Aansien, China; Palos, to Luchow; Pampanga, at Hongkong, China; Pecos, at Cavite, P. I.; Penguin, at Hankow, China; Pigeon, at Nanking; Sacramento, Swatow; Villalobos, at Changsha, China; Helena, Canton, China; Heron, Olongapo, P. I.

Destroyer Squadron.—Black Hawk at Manila, P. I.; Bulmer, at Shanghai, China; Edsall, Ford, Hulbert, at Manila, P. I.; McCormick, McLeish, Noa, at Cavite, P. I.; Parrott, at Shanghai, China; Paul Jones, at Cavite, P. I.; Peary, Pillsbury, Pope, Preble, Pruitt, Sicard, Stewart, Truxton, Wm. B. Preston, at Manila, P. I.; Simpson, Cavite, P. I.

Submarine Division.—Beaver (tdr.), at Cavite, P. I.; S-30, S-31, S-32, S-34, S-35, at Cavite, P. I.; Canopus (tdr.), S-36, S-37, S-38, S-39, S-40, S-41, at Manila, P. I.

Mine Detachment.—Rizal (F.), at Shanghai; Bittern, to Batavia, Java; Finch, at Cavite, P. I.; Hart, at Shanghai, China.

NAVAL FORCES, EUROPE

Vice Adm. Roger Welles, Commander. Pittsburgh (F.), at Cherbourg, France; Scorpion, at Trieste, Italy; Bruce, at Havre, France; Chas. Ausburne, Osborne, at Gibraltar; Coglian, at Cherbourg, France; Preston, Lamson, at Gibraltar.

MISCELLANEOUS

Chaumont, Shanghai; Henderson, Hampton Roads; Mayflower, Washington, D. C.; T-3, Portsmouth, N. H.

SPECIAL SERVICE SQUADRON

Send mail in care of Postmaster, N. Y. City, Denver, Galveston, at Balboa, C. Z.; Cleveland, to Guantanamo; Rochester, at Arica, Chile; Tulsa, at Cristobal, C. Z.

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Serge—15 oz.	54.00
Serge—16 oz.	46.00
Whipcord	60.00

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As predicted, most of the Second Issue has been sold in a comparatively short time. Hundreds of wise investors have already taken all but a limited amount of the Second Issue.

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The Second Issue, which is to be followed by a Third Issue at an increase in price from \$110 to \$115 a Unit, will probably be completely exhausted before the end of October. Reservations for the Second Issue will positively not be held later than October 31.

Partial Payment Plan

Units may be purchased for cash or on the Partial Payment Plan—10% down and 10% a month (\$11 down and \$11 a month for each Unit). Each payment earns dividends at the full rate, 8%, payable quarterly, from the date received.

Do Not Delay

Your first payment or remittance may follow by mail any time up to midnight, October 31, but you may telegraph your reservation in advance AT OUR EXPENSE.

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(and rank, if any)

Address

NAVY PROMOTION STATUS

October 15, 1925

The following junior officers have become eligible for promotion in various grades and ranks of the Navy:

Line.

R. Adm. G. C. Day

Capt. J. C. Martin

Comdr. J. C. Van deCarr

Lt. Cdr. E. E. Hazlett, Jr.

Lt. H. Goldwell

Lt. (j.g.) D. B. Candler

Medical Corps.

R. Adm. Albert M. D.

McCormick

Capt. R. C. Holcomb

Comdr. E. L. Woods

Lt. Cdr. E. J. Lanois

Lt. Robert E. Duncan

Dental Corps.

Lt. Cdr. H. R. McCleery

Lt. Raymond D. Reid

Supply Corps.

R. Adm. T. H. Hicks

Capt. C. J. Cleborne

Cdr. H. E. Collins

Lt. Cdr. J. P. Jackson

Lt. D. W. Robinson

Lt. (j.g.) E. T. Stewart, Jr.

Chaplains' Corps.

Capt. E. A. Duff

Cdr. T. L. Kirkpatrick

Lt. Cdr. H. G. Gathin

Lt. A. deG. Vogler

Construction Corps.

R. Adm. J. G. Tawressey

Capt. R. P. Schlabach

Cdr. Earl F. Enright

Lt. Cdr. H. L. Vickery

Lt. Mason D. Harris

Civil Engineer Corps.

R. Adm. F. R. Harris

Capt. Geo. A. McKay

Cdr. Greer A. Duncan

Lt. Cdr. H. C. Fischer

Lt. E. D. Miller

U. S. COAST GUARD

Assistant Secretary—Lt. Col. L. C. Andrews
Rear Admiral F. C. Billard, Commandant
Lieutenant Commander S. B. Yeandle, Aide to Commandant

COAST GUARD GAZETTE

Lt. Comdrs. (E.) E. W. Davis assigned Seneca; (E.) M. N. Esina assigned Gresham; G. E. Wilcox assigned chief of staff, Destroyer Force; C. H. Dench assigned Downes; F. W. Brown assigned Mojave.

Lt. (j.g.) W. S. Fish to report to commander, Destroyer Force, for further assignment.

Ch. Gun. (T.) J. Decosta assigned Base 15, Biloxi, as executive officer.

Bos'n (T.) E. A. Simpson detached Base 8, assigned Base 3, Nantucket; William A. Goldbeck detached special duty, assigned Rockaway Point Station, Fourth District; (L.) E. W. Snydam detached Rockaway Point Station, assigned Point of Woods Station, Fourth District; (T.) H. Goodwin detached Unalga, assigned Northern Division, Mach. (T.) A. L. McGee detached Yocoma, assigned Base 3, Nantucket.

Retired Bos'n (L.) C. H. Corbel, (L.) C. R. Hooper, (L.) A. A. Church, base 9, Cape May; (L.) Matthew Hoar, assigned active duty Academy.

Bos'n (T.) R. Adams, Base 6, Miami, resignation accepted.

SOCIAL HAPPENINGS IN THE SERVICES

ANNOUNCEMENTS of Personals, Entertainments, Engagements, Weddings, Births, will be received each week up to the time of going to press Friday. Photographs of brides are invited for publication. Address Editorial Offices of the ARMY AND NAVY JOURNAL, 1523 L Street N.W., Washington, D. C.

Col. Russell C. Langdon, U.S.A., and Mrs. Langdon gave a supper dance on October 9 at New York City in honor of Maj. Kenneth Boulnois, Royal Engineers, British Army, and Mrs. Boulnois, who are visiting Chancellor and Mrs. Elmer Ellsworth Brown.

Maj. Gen. J. H. McRae, U.S.A., assisted by his daughter, Mrs. Archibald M. Mixson, entertained at dinner on September 1 at Manila, P. I., in honor of Governor General and Mrs. Leonard Wood. The invited guests included Maj. Gens., U.S.A., Eli A. Helmick and William Weigel, Brig. Gens., U.S.A., and Mmes. Halstead Dorey, Thomas Q. Donaldson and Frank M. Caldwell, Hon. Robert L. Bacon of New York and Mrs. Bacon, Justice and Mrs. Finley Johnson, Dr. and Mrs. H. E. Stafford and Commander de Pinedo.

Capt. Lowell H. Smith, U.S.A., commander of the round-the-world flyers, was awarded the Helen Culver Medal of the Chicago Geographical Society on October 10, for "enlarging the horizon of human knowledge."

Capt. and Mrs. Archibald Mixson gave a tea dance on September 2, at Manila, P. I., in honor of Mrs. L. W. Curtin, niece of Col. and Mrs. Arthur W. Yates. Lieutenant Curtin, U.S.N., was one of the aviators in the recent attempt to fly to Hawaii. Among the guests, who numbered over 200, were Maj. Gen. W. Weigel, U.S.A., Brig. Gen. and Mrs. T. Q. Donaldson, U.S.A., and Brig. Gen. and Mrs. H. Dorey.

Capt. Douglas Griggs, U.S.A., and Mrs. Griggs, of Ft. Preble, Me., recently entertained with a delightful dinner for Colonel and Mrs. Wheatley, Captain and Mrs. Moeller, Lieutenant and Mrs. Kelly, Lieutenant and Mrs. Gregory, and Mrs. Griggs, Jr., the guests later going to the hop at Ft. Williams, Me.

Col. John McBride, U.S.A., Ret., and Mrs. McBride, of Portland, Me., were hosts at dinner recently for Colonel and Mrs. Wright, of Ft. Williams; Lieutenant Colonel and Mrs. Bowers, of Ft. McKinley; Lieutenant Colonel and Mrs. Wheatley, of Ft. Preble; Major and Mrs. Schute, and Major and Mrs. Riley.

Mrs. Harbord, wife of Maj. Gen. James G. Harbord, U.S.A., Ret., was hostess to a company of 12 at luncheon on October 13 at the Shoreham Hotel, Washington, D. C.

Rear Adm. H. McL. P. Huse, U.S.N., and Mrs. Huse are located at 2400 Sixteenth Street, since returning to Washington, D. C.

Capt. A. C. Moeller, U.S.A., and Mrs. Moeller entertained recently with an informal tea for 16 at their quarters at Ft. Preble, Me.

The annual Halloween party of officers and employees of the Quartermaster Corps, together with their friends and guests, will be held October 31, this year at 2400 Sixteenth Street, N. W., Washington, D. C. The committee on arrangements is preparing an attractive program which will include dancing, with novelty features, costume contests, and other fun-making attractions. The tickets, which are \$1 each, to defray actual expenses, may be purchased at 2007 Munitions Building, Washington, D. C.

Monthly luncheons of the Quartermaster Corps in Washington, D. C., which bring together Quartermaster officers of the three components of the Army of the United States, will be resumed. Maj. Gen. W. H. Hart, Q.M.G. of the Army, has appointed a committee which is now engaged in completing the arrangements and securing a list of speakers.

Comdr. C. R. P. Rodgers, U.S.N., and Mrs. Rodgers have rented Rear Admiral Dalton's house at 1616 Twenty-

second Street, Washington, D. C., for the season. Commander Rodgers has been given command of the U.S.S. Hannibal at the Philadelphia navy yard and will go to Cuba in December for the Winter.

Rear Adm. Montgomery M. Taylor, U.S.N., has been detailed a member of the National Board for the Promotion of Rifle Practice, vice Rear Adm. Charles F. Hughes, relieved.

Lt. Comdr. Frank L. Lowe, U.S.N., was among a group of 47 student applicants admitted to the bar of the District of Columbia Supreme Court on October 13. Commander Lowe was admitted out of turn in order that he might leave Washington to attend the meeting of the board of investigation into the sinking of the S-51 last month on the New England coast, of which he has been designated to act as judge advocate.

Maj. J. M. Lockett, U.S.A., commanding at Ft. Missoula, Mont., has received a letter from the Western Montana Fair Association thanking him for the assistance given by the fort in the entertainment program for the fair. Ft. Missoula staged a military exhibition, had an exhibit of arms and weapons at the fair, and gave a demonstration of airplane bombing.

Brig. Gen. John McK. Palmer, U.S.A., who has been at Walter Reed Hospital for treatment, has been ordered to report to an Army retiring board at Washington.

Col. Louis J. Van Schaick, U.S.A., and Mrs. Van Schaick entertained at supper at their home in Ft. Leavenworth in honor of Mrs. Van Schaick's parents, Dr. and Mrs. Preston S. Kellogg of Eagle Rock, Calif., on October 4. The occasion brought together a number of old Army friends who had been associated with Doctor and Mrs. Kellogg 20 years ago at Ft. Robinson, Nebr. Among the guests were Col. and Mmes. Albert E. Phillips, Alfred A. Hickox, William W. Edwards, Col. C. H. Muller, and Maj. and Mrs. Elvid Hunt.

Maj. Phillip H. Bagby, U.S.A., and Mrs. Bagby, and Capt. Reginald B. Crockett, of Ft. Leavenworth, were the guests at a box party given recently in Kansas City, Mo., for Mr. William Tilden, world's tennis champion, by his friend, Mr. Leon Gordon, author and leading man of "White Cargo," which is embarking on its third week in Kansas City after three years in New York.

Mrs. Timothy Hartwell, of Battery Park, Md., is the guest of her sister, Mrs. O. P. Robinson and Colonel Robinson, at Ft. Leavenworth.

Miss Sara Coxie and nurses entertained recently with dinner-bridge party and surprise miscellaneous shower at the nurses' new quarters, complimentary to Miss Anna Fallamel, who will shortly leave the Service to become the bride of Lt. Comdr. William F. Roehl, U.S.N. Covers were laid for 40.

Miss Elizabeth McCalla George, daughter of Mrs. Chapin Harry George, and the late Capt. Harry George, U.S.N., will be married on October 21 at the Cathedral of St. John the Divine, New York City.

Mrs. F. C. Billard, wife of Admiral Billard, U.S.C.G., has returned to her home in Washington, D. C., after an enjoyable Summer spent at Old Lyme, Conn. Admiral and Mrs. Billard together with Lieutenant Commander and Mrs. Henley recently gave a delightful garden party in the beautiful gardens of Boxwood Manor, for the officers of the Coast Guard, stationed at New London, Conn., and their wives.

Mrs. Lee W. Wright after an illness

(Continued on page 166)

ENGAGEMENTS

Craigie—Morrison.—Mr. and Mrs. Robert Morrison, Park Hill, Yonkers, N. Y., announce the engagement of their daughter, Miss Victoria Morrison, to Lt. Laurence Carbee Craigie, A.S., U.S.A. The wedding will take place some time in December.

Dunn—Valiant.—Mr. and Mrs. Joseph W. Valiant, of Wardour, Annapolis, Md., announce the engagement of their daughter, Julia Wirt Valiant, to Midsn. Charles Carroll Dunn, of Washington, D. C. The wedding will take place in June. Miss Valiant is the granddaughter of the late Prof. William Wirt Fay, for many years head of the department of English at the Naval Academy.

Cousins—O'Connor.—Mr. and Mrs. Thomas O'Connor, of Waterford, N. Y., have announced the engagement of their daughter, Joan Elizabeth, to Maj. Ralph P. Cousins, A.S., U.S.A., now stationed at Fort Belvoir, Ill.

(Continued on page 166)

WEDDINGS

Bennett—Miller.—A wedding uniting two old Army families took place in St. Louis, Mo., on October 2, 1925, when the Rev. K. T. Hary united in marriage Miss Amy R. Miller, of 4467 Ashland Avenue, and Carlos Francois Bennett, formerly of Cleveland. Miss Miller is the youngest daughter of the late Maj. William H. Miller, U.S.A., Ret., and Mrs. Miller; also the sister of the late Lt. Col. Archie Miller, A.S. (6th Cav.), World Ace, awarded Congressional Medal of Honor for bravery, killed in an airplane crash in 1921.

Owing to recent bereavements in both families the wedding was very quiet, the bride dispensing with attendants. Miss Miller wore white crepe trimmed with lace flounces, also some very rare jewels in the bridegroom's family. From a chain hung an ancient Russian icon in silver, three inches long, containing a picture of the Virgin and Child, with ivory faces and hands. Also, worn as a narrow stole was a wonderful sample of early Russian beadwork in an elaborate pattern of roses, lilies and other flowers, in natural colors, tipped with pearl tassels and fringe, which over 200 years ago formed the covering of the scabbard of a Russian court sword worn by an ancestor at the coronation of Peter the Great. The engagement ring was in a quaint design of a heart and true lover's knot of diamonds, an heirloom in the De Beney family and the wedding ring of Bennett's grandmother. At the shoulder the bride wore a platinum brooch set with rubies in a beetle design, of rare Siberian workmanship.

Miss Miller was formerly the wife of the late William A. Mosberger, who died in 1923. Mr. and Mrs. Bennett will live at 4467 Ashland Avenue for the present. Mr. Bennett is the son of Carlos and Lydia Ada (de Sokoloff) Bennett, of Cleveland, and through his father is descended from one of the old Army families in this country. He is a nephew of Nicolas de Sokoloff, of St. Petersburg, former favorite of the last Czar, who appointed him Governor of Irkutsk, Siberia, and later gave him charge of all the fire departments in Russia. Mr. De Sokoloff died at his residence at Hungerbourg, Finland, last July.

Burmam—Fletcher.—Lt. Henry L. Burmann, U.S.N., attached to the U.S.S. Hull, and Miss Mary Muse Fletcher, niece of Adm. Frank H. Schofield, U.S.N., and Mrs. Fletcher, were married at the home of the latter in Coronado, Calif., October 1, 1925, Chaplain Eure officiating, in the presence of the relatives and a few close friends. Miss

Kays, daughter of Comdr. and Mrs. Harold Kays, U.S.N., was maid of honor. Lt. Joseph P. Rockwell, U.S.N., also of the U.S.S. Hull, was best man. Lieutenant and Mrs. Burmann, following a honeymoon trip, will make their home at 725 Third Street, Coronado, Calif.

Chandler—Wyeth.—The marriage of Miss Dorothy Wyeth, daughter of Mrs. Marlborough Churchill Wyeth and the late Colonel Wyeth, U.S.A., to Mr. Walter Clift Chandler of Memphis, Tenn., took place, October 10, 1925, in the Chantry of St. Thomas' Church, New York City. Bishop Frank DuMoulin officiating rector performed the ceremony. The bride was escorted by her brother, Maj. John Churchill Wyeth, 2d Field Artillery. Her only attendant was Mrs. John Churchill Wyeth as matron of honor. Mr. Chandler served overseas during the World War as captain in the 114th F.A., A.E.F. After November 1, Mr. and Mrs. Chandler will be at home at the Parkview, Memphis, Tenn.

Day—Tobin.—Lt. Dorrance K. Day, U.S.N., and Miss Agnes Tobin, daughter of Col. Charles M. Tobin, U.S.M.C., and Mrs. Tobin of Loma Portal, San Diego, Calif., were married at the home of the bride's parents on October 3, 1925, the ceremony being performed by Rev. Charles L. Barnes, rector of St. Paul's Episcopal Church, San Diego. The matron of honor was Mrs. William H. Schaefer, of Buffalo, N. Y., sister of the bride. I. Graham Pattison, of Pasadena, Calif., was best man. The groom is a son of Mr. and Mrs. Edwin B. Day, of Providence, R. I., and was graduated from the Naval Academy in 1919. He returned recently from the Australian cruise of the fleet, and will soon report at Portsmouth, N. H., for shore duty.

Pfaff—Myers.—Lt. Comdr. Roy Pfaff, U.S.N., and Miss Nell Pauline Myers of Chichasha, Okla., were married at Indianapolis, Ind., on October 7, 1925.

Woodruff—Huntington.—Lt. Charles E. Woodruff, Jr., Inf., U.S.A., son of the late Col. Charles E. Woodruff, M.C., U.S.A., and Miss Aline Fitch Huntington, daughter of Lt. Col. P. W. Huntington, M.C., U.S.A., were married at Washington, D. C., on September 16, 1925. The wedding was the culmination of an acquaintance since childhood. Lieutenant Woodruff was a member of the class of 1923, U.S.M.A., and has lately been on duty with the 16th Tank Battalion at Camp Meade, Md. Mrs. Woodruff at the time of the wedding was living in Philadelphia, where

(Continued on page 166)

BIRTHS

Custer.—Lt. J. Earl Custer, Inf., U.S.A., and Mrs. Custer announce the birth of a son, Robert Earl, at Ft. Benning, Ga., October 4, 1925.

Durnford.—Lt. James A. Durnford, Q.M.C., U.S.A., and Mrs. Durnford announce the birth of a son, James Albert, Jr., at Sternberg General Hospital, Manila, P. I., August 20, 1925.

Lockwood.—Lt. H. N. Lockwood, Jr., U.S.A., and Mrs. Lockwood announce the birth of a daughter, Lillian, at Walter Reed Hospital, Washington, D. C., on October 8, 1925.

Prosser.—Maj. William O. H. Prosser, M.C., U.S.A., and Mrs. Prosser announce the birth of a son, Stewart Keeling Prosser, at Letterman General Hospital, Calif., September 30, 1925.

Sheets.—Lt. H. B. Sheets, 35th Inf., U.S.A., and Mrs. Sheets announce the birth of a son, Henry Bennett Sheets, Jr., at Buffalo, N. Y., October 5, 1925.

Stewart.—Born to Col. G. H. Stewart, O.D., U.S.A., and Mrs. Stewart, at

(Continued on page 166)

OBITUARIES

Announcements of deaths should be addressed to Editorial Office, Army and Navy Journal, 1523 L St. N. W., Washington, D. C.

England.—Brig. Gen. Lloyd England, former Adjutant General of Arkansas, and a prominent business man, died at his home in Little Rock, Ark., October 5, 1925. General England was a graduate of the U.S.M.A. in the class of 1896, when he was assigned to the 3rd Artillery. During the War with Spain he served as a captain in the 11th U. S. Volunteer Cavalry, and was almost continuously in the field in the Philippines to June 7, 1900. He took part in a number of major engagements there, and was nominated for brevet captain for distinguished gallantry in action at Manila and Calocan.

He resigned from the Army August 26, 1907. He was appointed brigadier general and The Adjutant General of Arkansas, October 14, 1913. During the World War he was active in the mobilization of the Arkansas troops, and supervised the induction in the Service of 65,000 Arkansas men. He served as chairman of the National Council of Defense in Arkansas, aiding in the direction of the Liberty Loan, Red Cross, and other war work drives. At the time of his death General England was vice-president of the England National Bank, and was connected with other business activities. He is survived by his wife, two brothers, J. E. England, Jr., and Shelby England, and several nephews and nieces, all of Little Rock, Ark. General England was known as a man of high attainments, and was held in great esteem. Governor Tarral issued a special announcement of the death, paying a high tribute to General England. Funeral services were held at the First Methodist Church, Little Rock, October 6, the pall bearers including Col. James A. Shipton, U.S.A.

Gibson.—Mrs. John S. Gibson, who died October 10, 1925, at the Walter Reed General Hospital, Washington, D. C., was the mother of Mrs. John M. Willis, wife of Major Willis, Med. Corps, U.S.A. Mrs. Gibson was also the mother of Capt. John S. Gibson, Med. Corps, U.S.A., and of Mrs. George S. Wallace, wife of Colonel Wallace, Judge Advocate General's Reserve Corps, Huntington, W. Va.; of the Rev. James D. Gibson, of Covington, Ky., and of Mr. Philip P. Gibson, of Huntington, W. Va.

Lemly.—Maj. Henry R. Lemly, U.S.A., Ret., who served, among other duties, in several Indian campaigns, died in Washington, D. C., of heart disease on October 12, 1925. He was born in Bethania, N. C., January 12, 1851, and was a graduate of the U.S.M.A., class of 1872, when he was assigned to the 3d Cavalry. He was transferred to the Artillery in 1878. Among other duties, Major Lemly took part in Indian campaigns on Tongue River, at Rosebud, Slim Buttes and Belle Fourche. He also, in later years, directed the National Military School at Bogota, Colombia, with a local rank there of colonel. He also served as commanding general for Colombia at the World's Colombian Exposition. Major Lemly was retired in 1899, at his own request, after more than 30 years' service, but was ordered to active duty in the Office of the Quartermaster General soon after the outbreak of the World War. He is survived by a son, Maj. Rowan P. Lemly of the Gen-

(Continued on page 166)

Memorials at Arlington

We specialize in designing and erecting memorials (monuments, mausoleums, tablets) in Arlington and other national and private cemeteries throughout the country. Illustrated booklet "J" sent free on request.

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MARINE CORPS ORDERS

Maj. Gen. Commandant J. A. Lejeune

October 9, 1925

Maj. H. L. Smith, A.Q.M., to the Depot Supplies, Philadelphia, Pa.

Capt. C. H. Brown, on October 15, to Asiatic Station; H. H. Shepherd, on October 15, to N.A.S., San Diego, Calif.; T. A. Tighe and 1st Lt. J. T. Selden to M.B., Quantico, Va.

Second Lts. P. A. Curtis to the Naval Hospital, Norfolk, Va.; M. H. Mizell to Headquarters Marine Corps, Washington, D. C.

October 12, 1925

Capt. E. O. Ames, R. Winans, C. B. Hobbs, 1st Lt. D. Kipness, 2d Lt. V. E. Megee and Maj. H. C. Pierce to M.B., Quantico, Va.

Second Lts. J. G. Walraven, W. J. Scheyer, M. B. Twining and F. E. Sessions to M.B., Quantico, Va.; 1st Lt. H. R. Anderson to the Chemical Warfare School, Edgewood Arsenal, Edgewood, Md.; 1st Lt. B. W. Pravitz, died on October 8, 1925; 1st Lt. R. W. Luce, 2d Lts. A. W. Kreiser, R. J. Mumford, A. D. Cooley, C. L. Fike, on October 19, to Department of the Pacific.

Second Lt. J. Grove, resigned.

October 14, 1925

Maj. J. L. Doxey to Department of the Pacific.

Capt. J. M. Pearce, on October 30, to Asiatic Station.

Capt. G. A. Stowell to M.B., N.S.B., Coco Solo, I.C.Z.

Qm. Ck. C. F. Dalton, died on October 10, 1925, at the Naval Hospital, Washington, D. C.

U.S.M.C. PROMOTION STATUS

October 15, 1925

Commissioned. Will make number in grade indicated on next vacancy.

Col. Wm. C. Harllee	Col. Norman C. Burton
Lt. Col. W. M. Small	Lt. Col. R. B. Farouhamson
Maj. Harold C. Pierce	Maj. John B. Sebree
Capt. Chaplain G. Hicks	Capt. Albert B. Sage
1st Lt. John A. Bemis	1st Lt. James M. Smith

MILITARY CLUBS AND SOCIETIES

SOJOURNERS' CLUB

A meeting of New England Chapter No. 12, Sojourners' Club, was held at Massasoit Lodge, A. F. & A. M., Fall River, Mass.

Maj. DeForest Anthony, 302d Infantry, was raised to the degree of Master Mason by a Sojourners' team consisting of the following members:

Cols. F. G. Bauer, J.A.G.D., master; G. D. Moore, I.G.D., senior warden; Lt. Col. C. D. Bunker, C.A.C., junior warden; Maj. H. S. Beckford, M.C., treasurer; Brig. Gen. M. H. Barnum, secretary; Capt. F. B. Crandall, C.C., chaplain; Cols. A. N. Payne, Inf., marshal; G. B. Stebbins, Inf., senior deacon; W. E. Horton, Q.M.C., junior deacon; Lt. Col. A. Greig, Jr., C.A.C., senior steward; F. Geere, C.A.C., junior steward; Col. F. W. Stopford, C.A.C., Lt. Col. A. Greig, Jr., C.A.C., F. Geere, C.A.C., D. T. Gallup, Cav., Maj. H. S. Cushing, F.A., C. L. Eastman, S.C., G. H. Reese, Fin. Dept., A. Berwick, Q.M.C., W. A. Genoar, Inf., Capt. J. C. Branth, A.G.D., R. Morgan, A.G.D., E. C. Meade, C.A.C., M. H. Summerfield, D.C., S. A. Weir, M.A.C.; Bugler, W. Purcell. Additional members: Lt. Col. C. W. Godfrey, Q.M.C., Maj. F. A. Hovey, C.A.C., Capt. C. H. Searcy, Inf.

AMERICAN LEGION

Officers of the American Legion for the ensuing year were elected on the last day of the convention at Omaha on October 9 as follows: John R. McQuigg of East Cleveland, Ohio, was elected national commander of the American Legion, on the first ballot.

Joseph Sheney of Florida, Raymond S. Littlefield of Rhode Island, Hughes B. Davis of Oklahoma, Vincent A. Carroll of Pennsylvania and James A. Howell of Utah were elected national vice commanders.

Commander McQuigg has had an extensive career as a soldier and officer, serving in the Spanish-American War on the Mexican border and in the World War. In private life, Commander McQuigg is an attorney and banker.

The Legion unanimously adopted a resolution recommending the creating a separate cabinet officer as defense secretary to have control of three equal branches, Army, Navy, and Air.

NEW YORK CHAPTER, 4TH DIVISION

The first annual entertainment and ball will be given by the New York Chapter of the 4th Division at Hotel Majestic, 72d Street and Central Park West, New York City, on Armistice Night, November 11. The tickets admitting one, including buffet lunch, are \$2.50. Notification of this memorial event has been sent to all corners of the United States. The chapter wants major generals as well as rear rank bucks to dance, sing and eat with them on that night. The families and friends of the men of the 4th Division are cordially invited to attend. Charles A. Koehler who resides at Baldwin, L. I., is the secretary of the chapter to whom acceptances should be sent.

WAR INDUSTRIES BOARD ASS'N

Members of the War Industries Board Association, have decided not to hold an annual reunion this Fall. They favor holding the next reunion in 1926.



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COMPANIES I, K AND L, 45TH U. S. INFANTRY, ESTABLISH SHOOTING RECORDS.—The 3d Battalion, 45th Infantry (P.S.), Companies I, K and L, under the command of Maj. Vincente Lim, recently made a record in target practice believed to be the best ever made by any Infantry battalion of the United States Army, and it is the best ever made in the Philippines. The record made consisted of a battalion average of 294.5, and is one of which the battalion can feel proud. Companies I, K and L are commanded by Captains Heard, Gilbert and Stanley, respectively.

This record is more pronounced when compared with the firing results of previous years. The 45th Infantry (P.S.) has always been among the best in the Service in rifle firing and has made many excellent records in past years, particularly in 1924. This year's record of the 3d Battalion surpasses last year's battalion and regimental results by an average of practically 10 points.

Records for the past two years demonstrate particularly the advance in shooting the battalion has made.

In 1924 the several companies qualified the several grades of marksmen as follows: Co. I, 14 experts, 26 sharpshooters, and 39 marksmen, with no men unqualified. Co. K had 18 experts, 28 sharpshooters and had 3 unqualified men. Co. L had 14 experts, 33 sharpshooters, 33 marksmen and no unqualified.

In 1925 the figures were: Co. I, 32 experts, 28 sharpshooters, 16 marksmen, and no unqualified. Co. K had 31 experts, 31 sharpshooters, 14 marksmen and no unqualified. Co. L had 32 experts, 29 sharpshooters, and 17 marksmen, and 1 man unqualified.

The reduction in the number of experts and sharpshooters in 1924, compared with the previous year, was due to the increase by the War Department in the qualification standards, even though the average score per man was higher than in 1923. This year the number of experts and sharpshooters increased, despite the higher qualification.

A "uniform high standard of instruction" was the keynote of the battalion's training. The records show the wisdom of this policy, each company having practically the same number of experts, sharpshooters and marksmen.

No report is complete without full data on the men who failed to fire and the reasons therefor. A total of seven men failed to fire, five of whom were on detached service, with the remaining two sick and actually in the hospital. All seven men are excellent shots, and if present would have raised the average still higher. No man, aside from the men above stated, was excused from firing for any purpose whatsoever. In fact, eight men in the battalion, who were to participate as athletes in the Far Eastern Olympic Games and who were needed in Manila, fired ahead of time in a separate group, finishing just in time to begin athletic training. High score for enlisted men was made by Sergeant Cabading, Co. K; Capt. C. S. Gilbert and 2d Lt. R. V. Murphy were tied for first place among the officers.

Rifle firing in the Philippines, with Scout troops, has become a science, and competition among the enlisted personnel has always run high.

SCHOOL CONCESSIONS FOR ARMY CHILDREN.—Maj. Gen. Robert C. Davis, The Adjutant General of the Army, announced this week that the San Rafael Military Academy, San Rafael, Calif., will make a reduction of from \$45 to \$50 for the sons of officers and enlisted men of the Regular Establishment. Applications for these concessions will be made in the usual manner.

NEWS FROM POSTS AND STATIONS

CAPTAIN EARLE NEW PRESIDENT OF WORCESTER TECH, OCTOBER 22.—Capt. Ralph Earle, U.S.N., an officer of distinguished service, will be inaugurated as president of the Worcester (Mass.) Polytechnic Institute, in the Alumni Gymnasium of the institute on October 22, at 10 a. m. The exercises will begin with an invocation by Rev. Dr. Shepherd Knapp, pastor of Central Congregational Church, Worcester, a member of the Board of Trustees. The formal installation will be by Hon. Charles G. Washburn, of Worcester, senior member of the Board of Trustees. Addresses will be made by Rear Adm. William V. Pratt, U.S.N., president of the Naval War College; Prof. George H. Haynes, senior member of the faculty; George E. Williamson, of Springfield, class of 1900, president of the Alumni Association; and for the student body by a member of the senior class. President Earle will deliver the inaugural address. The benediction will be by Rev. Dr. Maxwell Savage, pastor of the First Unitarian Church, Worcester, a member of the Board of Trustees. Following the inaugural exercises a reception will be given by President and Mrs. Earle, at the president's house, to delegates, trustees and faculty.

Hon. Francis W. Treadway, 1890, of Cleveland, Ohio, a former lieutenant-governor of that state, will act as toastmaster at the inaugural dinner. The invocation will be by Rev. Dr. William R. McNutt, pastor of the First Baptist Church, Worcester, a member of the Board of Trustees. Among the scheduled speakers are Hon. Michael J. O'Hara, mayor of Worcester; Dr. Ira N. Hollis, retiring president of the institute; Dr. William F. Durand, president of the American Society of Mechanical Engineers, and Dr. Samuel W. Stratton, president of the Massachusetts Institute of Technology.

GENERAL HOWZE DEDICATES OHIO DAMS.—Maj. Gen. Robert L. Howze, U.S.A., 5th Corps commander at Ft. Hayes, left, October 6, for Wheeling, W. Va., where he boarded the steamer Cincinnati as the guest of the Ohio Valley Improvement Association on the trip down the Ohio from Pittsburgh, Pa., to Cincinnati, Ohio. On the trip down, General Howze participated in the dedication of the recently completed dams and locks on the Ohio River, insuring nine feet of water from Pittsburgh to Cairo. He arrived at Cincinnati October 8.

Among the distinguished company of guests aboard the Cincinnati were: Hon. Ed Jackson, Governor of Indiana; Hon. Charles H. Lewis, Lieutenant Governor of Ohio; Hon. C. A. Newton, Chairman of the House Rivers and Harbors Committee; Hon. Simeon D. Fess, U. S. Senator; Hon. Frank B. Willis, U. S. Senator; Hon. Thomas H. Montgomery, Mayor of Toronto; Hon. Frederick W. Donnelly, Mayor of Trenton; Hon. William H. Elmdorf, Mayor Evansville; Hon. Dwight F. Davis, Acting Secretary of War; Maj. Gen. Harry Taylor, Lansing H. Beach, Edgar Jadwin, Robert L. Howze, and William L. Sibert, all U.S.A.; Brig. Gen. T. Q. Ashburn, U.S.A., Inland Waterways Corporation; Col. J. W. Viner, Cincinnati; Col. C. W. Kutz, C.E., U.S.A.

GERMAN RADIO TRANSMITTER.—The Navy Department has been advised that a German firm has developed a radio transmitter which greatly increases the efficiency of the fleet's communication system. The equipment requires no vacuum tube, but according to the claim that is made for it, it would be more rugged and simpler than the best tube transmitter. It is stated that the communication can be maintained within units required on board of a ship at constant frequency within 1/1,000 of 1 percent.

FORT LEAVENWORTH, KANS.

The Commandant and Mrs. King entertained delightfully at an informal tea after the Air Show, in honor of their house guests, Mmes. Aubrey Lippincott and Benjamin Grimes, of Ft. Riley, Kans.

A number of class dinners have been given recently. The class of 1909 held a get-together dinner at the club house. Those present were Maj. and Mmes. Robert I. Eichelberger, Stuart C. Godfrey, Roy H. Coles, Frank S. Besson, Merl P. Schillerstrom, Edwin P. Marks, Fred Erick A. Mountford, Elkin I. Franklin, and Maj. J. S. Ord and Joseph Plassmeyer.

Brigadier General and Mrs. King were the honor guests at dinner before the hop of Capt. and Mrs. McFarland Cockrill.

Lieutenant Colonel and Mrs. Clarence Lininger and Major and Mrs. Lawrence B. Pillsbury entertained with a joint dinner at the Golf Club for Col. and Mmes. Ralph Parker, Selwyn Smith, Herbert Gibner, Maj. and Mmes. Elvid, Hunt, and Haskette I. Conner, Capt. and Mrs. Louis Witney, Col. and Mrs. George Turner, Mr. and Mrs. Henry Julian, of Kansas City, Mo., and Mrs. Huntington, of California, who is visiting her daughter, Mrs. Ralph Parker.

Maj. and Mrs. Rufus F. Maddux also gave a dinner at the club house.

Col. and Mrs. Henry T. Bull's dinner was given at home, in honor of Commodore Bull.

Maj. and Mrs. David McCoach, Jr., honored Mr. and Mrs. E. S. McCoach, of Marion, Pa., with a dinner at the Golf Club.

Col. and Mrs. Jerome Pillow entertained at dinner for Mrs. Aubrey Lippincott and Mrs. Benjamin Grimes, before the hop.

The student officers of the class of 1908 and their wives were entertained by their instructor classmates recently at a dinner at the Golf Club. Those giving it were Majors and Mmes. Peterson, Buckner, Parrott, Kennedy, Welbourne, and Hughes.

The Coast Artillery instructors and their wives gave a tea at the Golf Club in honor of the newly arrived officers of that branch and their wives.

A large dinner was given at the Leavenworth Country Club by Maj. and Mrs. John C. Moore.

Mrs. E. S. McCoach, of Marion, Pa., was honored by Mrs. David McCoach, Jr., at a tea given by Mrs. McCoach and Mrs. Frank S. Besson at the home of the latter. Over a hundred guests were invited.

The Music Club's "premiere" was enthusiastically attended. Mrs. Gynther Storaasli's beautiful voice delighted the audience in her well-chosen program, and especially in Massenet's "Elegy," when Mrs. William Bryden accompanied with an exquisite violin obligato. Mrs. Meals, whose ability at the piano is well known in the Army, rendered various delightful compositions. The garrison is fortunate to have such well-developed talent for its enjoyment through the coming months.

Miss Isabel Rayner, of Montclair, N. J., is the guest of her brother, Maj. Harold M. Rayner, for ten days. Miss Rayner was entertained by Col. John D. Long at a luncheon given at his home, to meet his niece, Miss Elizabeth Herod, of New York, who is his house guest.

Miss Janet Muller, daughter of Lt. Col. and Mrs. Carl Muller, is receiving congratulations on receiving first prize in the fire prevention essay contest held at the Leavenworth Junior High School, for Fire Prevention Day, October 9.

Col. P. B. Paul, Res. Corps, was a recent visitor at Ft. Leavenworth, where he has many friends.

WASHINGTON BARRACKS, D. C.

Mrs. Hanson E. Ely entertained at a tea at her home in compliment to her son and daughter-in-law, Lt. and Mrs. Eugene B. Ely, who are house guests from Ft. Sam Houston. The post was present en masse and many from Washington were present.

Col. and Mrs. Charles M. Bundel are entertaining as their house guests Mr. and Mrs. Charles Duffy, of Burlington, Iowa. Colonel and Mrs. Bundel's honor guests at the dinner dance were Mr. and Mrs. Duffy.

Col. and Mrs. William Preston Wooten entertained at dinner in compliment to Mrs. Edgar Jadwin at their home. Others of the party were Col. and Mrs. Harley B. Ferguson, Maj. and Mrs. R. A. Wheeler, and Maj. Paul S. Reinecke.

Maj. and Mrs. Condon C. McCornack have visiting them Mrs. McCornack's parents, Mr. and Mrs. F. M. Wilkins, of Eugene, Ore. They are pleasant additions to the post circle.

Lt. and Mrs. Eugene B. Ely were the honor guests for whom Col. and Mrs. William Preston Wooten entertained at a bridge party. The other guests were Gen. and Mrs. Hanson E. Ely, Col. and Mrs. Thomas A. Roberts, Asst. Commandant, and Mrs. Herbert B. Crosby, Col. and Mrs. Evan H. Humphrey, Col. and Mrs. James B. Taylor, and Capt. and Mrs. Milton O. Boone. There were four tables of bridge players.

Col. and Mrs. M. C. Sweeney have had as their house guests Mrs. Holland, of New York. Mrs. Holland is a sister-in-law of Mrs. Sweeney. She has left for her home.

A dinner given at the club of the General Staff proved to be very enjoyable. There were twelve hosts, eleven tables, with a large double table, at which Gen. and Mrs. Hanson E. Ely

were hosts, entertained a large number of guests. The others having tables were Col. and Mmes. Charles M. Bundel, W. D. Smith, W. T. Bates, G. Kent, Maja, and Mmes. J. H. Stutesman, J. K. Crain, T. M. Robins, P. L. Thomas, C. S. Blakely, Lt. Col. L. S. Morey, and Col. R. H. McMaster.

Mrs. Kennedy entertained at luncheon and bridge at the Chevy Chase Club.

Col. and Mrs. William Preston Wooten gave a theater party in honor of Mrs. Arthur Handcock, of Kentucky and Virginia.

Colonel and Mrs. Wooten entertained in honor of Mrs. Thomas Darrah, of Atlanta, Ga. Gen. and Mrs. Robert H. Allen were the other guests.

FORT SHAFTER, HAWAII

Mrs. Edward M. Lewis entertained with a bridge tea in honor of her daughter, Mrs. A. B. Newmann. Invited to bid farewell to Mrs. Newman were Mmes. Lee Harkins, Rufus Hagood, John Carruth, Benjamin Lockwood, George Lovell, Jr., Matt Bristol, Lawrence Weeks, Hortense Madge, Chillion Wheeler, Rex Chambers, Paul Prentiss, George McEntire, William Farnum, Henry Matchett, Leland Hobbs, Nichol Gabraith, George de Graf, Harold Bull, Edward Williams, William Wood, John Wood, Crampton Jones, Walter Weible, Arthur Parsons, George Patton, Jr., James Fish, Miss Katherine Smith, Miss Mary Schultz, Miss Daphne Damon, Miss Frances Cooper, and Miss Virginia Fuller. Miss Virginia Murphy joined the party at the tea hour.

Lt. and Mrs. John Hanley entertained at dinner for twelve.

Mrs. Lucius Patterson entertained at bridge, having as her guests Mmes. Charles Craig, Homer Connor, Rowland Wolfe, Wilmer T. Scott, Thomas Long, Herbert Quickel, Ralph E. Murrell, William Thompson, Lewis Bibb, Charles Perfect, Charles Brice, John Ross, Jesse Mae, John Hanley, Felix Parsons, and Walker Holler.

Capt. and Mrs. Clarence Harvey entertained at dinner in honor of Maj. and Mrs. Rowland Wolfe, who have left for their new station. Covers were laid for the hosts, the guests of honor and Maj. and Mrs. Herbert Quickel, Maj. and Mrs. Thomas Long, Capt. and Mrs. William Thompson, and Mrs. John Ross.

Maj. and Mrs. Frederick Brown entertained with a box party at the Territorial Fair for their niece, Miss Betty Hancock, Miss Peggy Murphy, and Midshipman John Murphy.

Mr. and Mrs. George Sipe and Lt. and Mrs. George Brent entertained with a dinner and bridge in honor of Capt. and Mrs. Charles Brice, who have left Honolulu.

Maj. Gen. Edward M. Lewis entertained with a stag dinner in honor of Adm. S. S. Robison, and the flag officers of the fleet, which has returned to Honolulu after its trip to Australia. Major Lewis' guests were Admiral Robison, Gov. Wallace Farrington, Rear Adm. L. A. Bostwick, W. D. MacDougal, H. J. Viegelmeyer, G. R. Marvell, Richard Leigh, Maj. Gen. Hunter Liggett, Brig. Gen. R. P. Davis, and Brig. Gen. Thomas Slavens.

Col. and Mrs. Abraham G. Lott entertained at dinner, having as their guests Brig. Gen. George V. H. Mosley, Mrs. Hortense Mudge, Col. and Mrs. Walter Short, Col. and Mrs. Theodore Schultz, Maj. and Mrs. Benjamin Lockwood, and Capt. and Mrs. Jones.

Capt. and Mrs. Guy Hartwick were dinner hosts, having as their guests of honor Mr. and Mrs. T. G. Hitt.

Capt. and Mrs. Ralph E. Murrell have as their house guests for an indefinite stay, Mrs. Murrell's mother and sister, Mrs. J. W. Finley, and Miss Leah May Finley, of St. Louis, Mo.

Capt. and Mrs. Charles Perfect entertained at dinner before the reception and dance which was given in honor of the admiral and officers of the fleet by the Hawaiian Department, in honor of Ensign Hopkins, of the West Virginia. The other guests were Capt. and Mrs. Harold Adams, Lts. and Mmes. Sherman Willard, Walter Wolfe, and Walker Holler, and Lt. J. H. Gibbons, Jr.

Capt. and Mrs. Amos Tyree had as their house guest during the stay of the fleet in Honolulu, their son, Ens. D. Merrill Tyree, of the West Virginia.

PORTSMOUTH NAVY YARD

Rear Adm. Joseph Foster, U.S.N., Ret., and Mrs. Foster have closed their home on Middle Street, Portsmouth, and have left for Cleveland, Ohio, to visit their son, Joseph Foster, Jr., and family before they settle at 142 Bacon Street, Boston, for the winter.

An elaborate program is being arranged for Navy Day, October 27, and vessels at the navy yard will be thrown open to public inspection on that day.

Rear Adm. and Mrs. Douglas E. Dismukes were at home to their friends at their quarters at the navy yard, and a large number of guests were present. The Naval Band furnished music and dancing was enjoyed and refreshments served.

Capt. and Mrs. Victor S. Jackson and children have recently arrived at the navy yard where they have been assigned quarters.

Lt. Andrew C. Shiver, U.S.N., who has lately returned from his wedding trip, left recently for his new duty at Panama, with temporary duty of a month at Cuba. Mrs. Shiver will join her husband at Panama in December.

FORT ONTARIO, OSWEGO, N. Y.

Among the guests attending the wedding of Miss Kathryn Louise Ingram and Lt. Laurence Leroy Skinner were Lt. Col. and Mrs. Sheldon W. Anding, of Ft. Wadsworth, who were guests of Captain and Mrs. Mann; Mrs. Aubrey L. Clark, of Washington, D. C.; Miss Agnes Skinner, of Washington, D. C.; Mrs. Edwin Webb, of Philadelphia; Chaplain and Mrs. H. A. Kinard; and Miss Ingram, daughter of Col. and Mrs. Ralph E. Ingram, of Ft. Niagara, N. Y.

Lt. Col. and Mrs. George A. Herbst were hosts at a dinner bridge recently in honor of Lt. Col. and Mrs. Sheldon W. Anding. Their guests included in addition to the honor guests, Capt. and Mrs. J. Van Ness Ingram, Capt. and Mrs. Walter R. Mann, and Maj. Lee S. Tillotson.

Miss Edith Parsons has returned to her home in Montclair, N. J., after having spent a month with Lt. and Mrs. W. W. Robertson.

Maj. and Mrs. Lee S. Tillotson and son, Lt. and Mrs. Eugene L. Miller and children, and Lts. H. D. McHugh, R. L. Moses, and H. I. Kiel are newcomers to the garrison.

Mrs. Stanley J. Grogan was hostess at a very attractive tea, her guests being the ladies of the garrison. Captain and Mrs. Grogan will leave for their new station, Ft. Niagara, where Captain Grogan will take up his duties as regimental adjutant.

The evening bridge club was reorganized October 6, when Lieutenant Colonel and Mrs. Herbst were the hosts. There were five tables.

SEVENTH INFANTRY NOTES

Maj. and Mrs. Alfred E. Sawkins entertained at dinner at their quarters in honor of new arrivals on the post. Guests included Brig. Gen. and Mrs. Paul A. Wolf, Col. and Mrs. Frank J. Morrow, Colonel and Mrs. Little, Major and Mrs. Taylor, Captain Stanley, and Senator and Mrs. Shaw.

A reception and dance was held at the service club at Vancouver Barracks in honor of the new brigade commander, Brig. Gen. Paul A. Wolf, and Mrs. Wolf, and the new regimental commander of the 7th Infantry, Col. Frank J. Morrow, and Mrs. Morrow. The affair was the first of its kind since the regiment returned from Summer training at Camp Lewis and was very colorful. Many guests from Portland and Vancouver were present. This dance is the first of many dances planned at Vancouver Barracks for the coming season.

CAMP HUMPHREYS, VA.

Mrs. Markham and daughter have joined Colonel Markham on the post.

Mrs. Snowden Skinner, who has been spending the Summer with her parents at Jamestown, R. I., has returned to the post.

Captain and Mrs. Wyman entertained with a beautifully appointed dinner for sixteen guests before the reception to the new detail.

The post is rapidly resuming its Fall activities. Mrs. Weart and children have returned from a visit to Chicago. Major and Mrs. Bragdon are back from a month's leave spent in northern New York. Mrs. Conklin has returned from visits in Jamestown and New York. Captain and Mrs. Snow and family, who spent the Summer in Maine, are now home.

Mrs. Bragdon entertained with three tables of bridge. Prizes were won by Mrs. Vaughn and Mrs. Skinner.

Major and Mrs. Young were hosts at dinner before the recent hop.

Mrs. Watts honored Mrs. Markham with a delightful bridge and tea at her quarters.

Mrs. Heavey has left for a visit of several weeks to Louisville, Ky.

Mrs. Hill entertained delightfully with five tables of bridge. Prizes for high scores were won by Mrs. Skinner, Mrs. Conklin, and Mrs. Lock.

Captain and Mrs. Hammond and baby, Betty, have left for visits to Atlanta, Ga., and Louisville, Ky.

Capt. and Mrs. Bernard Smith have returned to the post after a leave spent in San Antonio.

Mrs. Vaughn, who is the guest of Mrs. Lock, has been the recipient of many delightful hospitalities since her arrival. Mrs. Lock recently entertained with a charming bridge and tea in her honor.

Miss Ruddy, of New York, is the guest of her sister, Mrs. Troudeau.

Mrs. Arthur Brown was recent hostess for five tables of bridge.

Lieutenant and Mrs. Rowland have as their guest Miss Lyons.

Maj. and Mrs. Carey Brown are the guests of Captain and Mrs. Smith for several days.

NEW YORK UNIVERSITY, N. Y.

Among the recent Army arrivals at the University is Capt. Raymond J. Farrell, U.S.A., Ret., who has enrolled in the Aeronautical School.

The Regular Army officers on duty at the University and the Reserve officers of both the Army and Navy who are members of the faculty or alumnae, have organized the New York University Army and Navy Club. There are 29 charter members. The purpose of the club is to foster the cause of National Defense among college men and to promote activities of professional and social and social interest through the media of smokers and informal meetings.

NEWS THROUGHOUT THE WORLD

Maj. Kenneth Boulnois, of the Royal Engineers, British Army, gave an interesting lecture to the Cadet Regiment on his recent expedition through Africa, on October 7 and one on October 8, "The Scientific Aspects of Exploration on Establishing by Wireless One's Position on the Earth's Surface." Major Boulnois has already delivered the above lectures before the Royal Geographic Society in London.

The Cadet Regiment was reviewed by Chancellor Elmer Ellsworth Brown, Ph. D., LL. D., and his guest, Maj. Kenneth Boulnois. Following the review the Regular Army officers and ladies stationed at New York University gave a tea-dance in honor of Chancellor and Mrs. Brown and Maj. and Mrs. Boulnois. Mrs. Langdon poured assisted by Mrs. Conolly. Hackett, Hopkins, Vohries, Misses O'Connell, Brown and Bouton. About 80 guests were present.

LUKE FIELD, HAWAII

Mrs. Edmund C. Langmead gave a delightful bridge-tea at her quarters. The guests included Mrs. Lester T. Miller, Ormond Butler, Robert S. Heald, Wallace R. Fletcher, Albert C. Foulk, Albert F. Hagenberger, Donald Norwood and Roscoe C. Wriston.

Mrs. George E. Lovell and Mrs. Hubert V. Hopkins were hostesses to the Air Service Bridge Club at the Country Club.

Capt. and Mrs. Donald P. Muse, Lt. and Mrs. Harold Clark, Lt. and Mrs. Ned Schramm and Lt. Bernard J. Toohar were guests at a dinner party given by Lt. and Mrs. Earl C. Peterson.

NAVAL ACADEMY, MD.

Miss Dorothy Nulton, daughter of Rear Adm. and Mrs. Louis M. Nulton, entertained at dinner before the regimental hop in honor of Miss Betty Kennedy, daughter of Mr. and Mrs. Robert E. Kennedy, of the Naval Hospital. Covers were laid for eighteen.

Lt. Grover C. Klein (C. C.) U.S.N., and Mrs. Klein are recent arrivals in Annapolis. Lieutenant Klein has been assigned to duty here.

Perhaps the largest, and certainly the most important, social function in connection with the Navy-Princeton football game, which is to be played in Baltimore on October 17, will be a buffet luncheon to be given by Rear Adm. Louis M. Nulton in the club room of the Administration Building at the Baltimore Stadium. Invitations have been issued for this luncheon and among the special guests will be Secretary of the Navy, Curtis D. Wilbur, Gov. Albert C. Ritchie, of Maryland; Governor Silver, of New Jersey; President Hibben, of Princeton; several department chiefs from Washington, and others.

Capt. and Mrs. Yancy S. Williams have been spending a week in Annapolis, where they are visiting old friends before sailing for China, where, for the first time in his naval career, Captain Williams has been assigned to duty.

Lt. Allan E. Smith, 3d, U.S.N., Mrs. Smith and their son have returned to their home after a motor trip to Canada and New York.

Comdr. and Mrs. Herbert A. Jones have returned to the Naval Academy after spending three months in California, where Commander Jones supervised the production of the "Navy's own motion picture," "The Midshipman," filmed at the Naval Academy last June week.

Mrs. John M. Hawley, widow of Rear Admiral Hawley, is the guest of her daughter, Mrs. Leslie B. Anderson, wife of Commander Anderson, U.S.N.

Mrs. Louis M. Nulton and Midshipman James Raugh, chairman of the hop committee, received the guests at the midshipmen's hop, which was held in Dahlgren Hall, and which was the first regimental dance of the season.

After a month's leave, during which they motored to Quebec, Montreal, and other parts of Canada, Capt. and Mrs. Harry A. Baldrige have returned to their home.

Mrs. William J. Giles, wife of Commander Giles, who has been spending some time as the guest of Mrs. Robert Roosevelt, at the latter's home on Long Island, and in New York City at the Hotel Chatham, has returned to her home in the Naval Academy.

Mrs. Grosskopf, wife of Lt. Homel L. Grosskopf, entertained at tea at her home, for Mrs. Bunting, who is visiting Mrs. Robert A. Theobald. The guests were Lt. Comdr. and Mmes. E. B. Nixon, H. W. Underwood, Comdr. and Mrs. R. A. Theobald, Lieutenant Commander and Mrs. Hampton, Lt. and Mrs. J. L. Holloway, Jr., Lieutenant and Mrs. Seabury.

Miss Kathryn Cox, of Severna Park, entertained at a launch party in honor of Mrs. George K. Weber, who will leave Annapolis October 18 to join her husband, Lieutenant Weber, on the West Coast.

63D CAVALRY DIVISION

Capt. Renn Lawrence, Cav., and 1st Lt. W. T. Fletcher, Cav., have recently been assigned to the division, Captain Lawrence as executive officer, 310th Cavalry, with station at Nashville, Tenn., and Lieutenant Fletcher as executive officer, 309th Cavalry, with station at Asheville, N. C. Both officers have reported at their respective stations.

The following Reserve officers, recently allotted to the division, have been assigned to units as indicated after their names: 1st Lt. R. B. Ricker, Cav-Res, to Troop F, 309th Cavalry; 2d Lt. Thomas Wade Bruton, Cav-Res, to Troop C, 309th Cavalry; 1st Lt. Doyle Davis, Cav-Res, to Headquarters Troop, 309th Cavalry, and Capt. Allan Charles Gotschaldt, Cav-Res, to Headquarters, 310th Cavalry.

FORT M'PHERSON, GA.

Col. and Mrs. William H. Patterson and small daughter, Betty, who have been on leave for some time, have returned to the post. Mrs. Patterson has been very ill at the Walter Reed Hospital, but is much improved to the delight of their many friends.

Col. and Mrs. Thomas W. Darrah and Miss Marion Darrah will return to their home in Ansley Park, after having been away for the past six weeks.

Maj. and Mrs. Charles M. Roberts, who have been traveling in Europe for the past four months, have returned to Atlanta and are at home at the Georgian Terrace. Major and Mrs. Roberts have a host of friends in Atlanta who will learn with regret that they will have to leave soon for a tour of foreign duty.

Mrs. Ernest Eddy Haskell, who has been spending the Summer months traveling in California, returned to her home in Ft. McPherson, accompanied by her small niece, Nancy Jane Rice, and her sister, Mrs. B. P. Oswalt of San Francisco, who will remain for some time in Ft. McPherson.

Adm. and Mrs. Mark Bristol were the honor guests recently at a delightfully informal dinner when Mr. and Mrs. John W. Grant entertained in their honor.

Maj. and Mrs. R. H. Jacob were among those having boxes at the horse show, and they entertained at dinner at the Baltimore preceding the show, having for their guests Maj. and Mrs. Harry J. Keeley, Capt. and Mrs. Emil W. Leard and Lt. and Mrs. Jesse Graham.

Gen. and Mrs. LeRoy Eltinge have had as their guests during the past week their son and daughter, Lt. and Mrs. James Leland Bolt of Ft. Benning, and Miss A. M. Trotter, sister of Mrs. Eltinge.

Mrs. Orren Meyer and her daughter, Mrs. Dorothy M. Hares, will entertain at a bridge-luncheon, the third of a series of these luncheons, on October 20, the guests to include Miss Dorothy Bartlett, Mmes. Wells, Richard Taylor, Harry J. Keeley, Monte J. Hickok, Thomas S. Arms, Jesse Graham, Malcolm Fortier, Misses Marion Graham, Darrah, Margaret Kent, Mmes. John A. Otto, Cecil E. Henry, Henry J. Lusk and E. R. McLane.

Lt. and Mrs. James Leland Bolt, of Ft. Benning, who have been spending a few days as guests of their parents, Gen. and Mrs. LeRoy Eltinge, have left for Ft. Benning.

Miss A. M. Trotter, of Portland, Oreg., is the guest of her sister, Mrs. LeRoy Eltinge, at her home in Ft. McPherson.

FORT SNELLING, MINN.

Capt. and Mrs. Arcadi Gluckman are spending a month's leave of absence in Kansas City.

Mrs. Wilder, mother of Capt. Stuart Wilder, has returned from a visit to San Francisco.

In honor of her sister, Mrs. Rideout recently entertained five tables of bridge.

Lt. and Mrs. T. A. Dukes have returned after spending three months' leave in Texas.

Mrs. Welsh, Mrs. Wainer, Mrs. Rideout were recent hostesses to about 150 people from the Twin Cities at an Army style dinner, held for the purpose of discussing ways and means for raising funds for the proposed Ft. Snelling Chapel. Many clubs and organizations have been active on behalf of the chapel and success seems assured. They plan to raise \$100,000.

Lt. and Mrs. Jonitz left for a motor trip to Michigan to visit the former's parents.

Mrs. Shephard and Miss Shephard entertained five tables of bridge in honor of Mrs. Hornbrook and Miss Curtis.

Mrs. Lentz entertained with a tea in honor of the officers and their wives on duty at the University of Minnesota. Mrs. Welsh presided at the tea table.

Mrs. Welsh entertained with a bridge luncheon for all the ladies of the post.

An equitation class for the ladies of the post has been arranged. Lt. Hazelrigg will be the instructor.

Captain and Mrs. Boyer have recently arrived for duty here.

WEST POINT, N. Y.

Major General and Mrs. Sladen entertained at dinner, taking their guests later to the officers' hop. Those attending the dinner were Major and Mrs. McCulloch, Miss Betsy Sladen, Lieutenants and Mmes. Sturgis and Shattuck, Mrs. Charles Sleeper and Lieutenants Serbee and McCone.

Colonel and Mrs. Timberlake received the guests at the hop. Colonel and Mrs. Robinson were dinner hosts the same evening to Colonel and Mrs. Timberlake and Majors and Mmes. Chilton, Rose and Snyder.

Lieutenant and Mrs. Brown were hosts at a dinner party held in their apartment in Newburgh, the guests all coming over afterwards to Cullem Hall to attend the hop. Lieutenant and Mrs. Jervey were also hosts the same evening at a buffet supper given in honor of Mrs. Jervey's mother, Mrs. W. E. Pulliam, of Santo Domingo.

Capt. and Mrs. W. E. Pickering, of Washington, D. C., were week-end guests of Major General and Mrs. Sladen. Maj. Clifford Jones, of Washington, D. C., spent the week-end with Major and Mrs. Spurgin. Col. and Mrs. Edward Croft spent a few days recently with Major and Mrs. Snyder.

Chaplain and Mrs. Wheat recently enter-

tained Majors, and Mmes. McFarland, Snyder and Chilton at dinner in their quarters.

Miss Julia Poillon, of New York, is with Lieutenant and Mrs. Hoffman. Miss Rachel Williams, of Chattanooga, is spending the winter with her brother-in-law and sister, Lieutenant and Mrs. Alquist.

The Reading Club met on October 12 at the quarters of Mrs. Taylor. Mrs. W. A. Mitchell read a very interesting paper on the current politics in France.

The first meeting of the Cadet Chapel Altar Guild was held on October 13, at Mrs. Sladen's quarters. Sewing for crippled and orphaned children will be included in the Winter's work. Mrs. Spurgin is president of the guild, which will meet the second Tuesdays of the month.

The football game was well attended on October 10, the Army team again being victors. The score was: Army, 26; Knox College, 7. A tea-dance followed at Cullem Hall. Mmes. Wheat, Reeder, Armstrong, Williamson, DeWitt and Graham served tea.

Major and Mrs. Benson entertained at dinner for Miss Martha Wright, of Washington, D. C.

Mrs. Safford had three tables of bridge recently in honor of Mrs. Manuel Astor, of Porto Rico, house guest of Captain and Mrs. Navas. Mrs. Safford's guests were Mmes. Schlenker, Graham, Reeder, Alquist, Cross, Stephens, Whitson, Navas and Armstrong and Miss Herbert.

FORT MOULTRIE, S. C.

About 25 officers and ladies went by boat recently to the Isle of Palms for an outing. The men spent the afternoon in hunting while the ladies enjoyed other forms of entertainment.

Capt. and Mrs. George E. Thompson have left for a leave of one month, during which they will motor to Washington and other northern cities.

Maj. R. John West, Maj. Harry J. Castles, Capt. George E. Thompson and William B. Caldwell and Lt. Waine Archer went to Ft. Screven to attend the celebration of the opening of the Savannah River bridge at Savannah.

Mrs. John O. Grose, with her mother, Mrs. Hogan, will leave soon for Sedalia, Mo., where they will spend about two months.

Lt. and Mrs. Edward P. Earle have arrived from Birmingham, where they spent a month's leave after their return from service in the Philippines.

Lt. and Mrs. William R. Blakely have returned from a month's leave spent in various South Carolina towns.

Chaplain Orville E. Fisher has left for New York where he is spending a leave of ten days.

Lt. John D. Salmon is spending a short leave with relatives in South Carolina.

Capt. and Mrs. Harold S. Johnson entertained a number of officers and ladies of the post at dinner. Bridge was played. Capt. and Mrs. A. L. Morris were winners of the high score prizes.

Lt. and Mrs. Waine Archer entertained at dinner recently. Bridge and mah jong were played.

Maj. and Mrs. R. John West recently entertained at dinner.

The first meeting of the Ladies' Study Club was held at the quarters of Major and Mrs. West. Ladies on the first program were Mrs. West, Mrs. G. R. F. Cornish and Mrs. L. A. Dietz.

Maj. and Mrs. Daniel R. Chase entertained at dinner on October 10.

SCOTT FIELD, ILLINOIS

The officers of the post were hosts to a charming dinner dance at the club. This party was the first of a series of monthly hops arranged by the entertainment committee to be held during the Winter season.

Capt. and Mrs. Charles M. Savage entertained Maj. and Mrs. Norman Peek, Lt. and Mrs. Elmer Bowling and Mr. and Mrs. Robert Murray, of St. Louis at dinner and bridge.

Mrs. E. Wren, wife of Dr. Edward Wren, D.C., entertained eight guests at a bridge luncheon recently.

Mrs. J. C. Van Ingen, wife of Capt. James Van Ingen, S. C., entertained sixteen guests at bridge tea. Mrs. L. Skinner and Mrs. J. B. Huggins received the honors.

Lt. and Mrs. Ashley McKinley have returned after a month's leave spent on the Merrimac River.

Mrs. F. MacKenzie, wife of Chaplain Frank MacKenzie, has left for a three-week visit with relatives in Buffalo, N. Y., and Hamilton, Ont.

Majs. and Mrs. N. Peek and H. A. Strauss, Capt. and Mmes. E. Wren, G. Warren, and R. K. Simpson, Lts. and Mmes. H. Holland and E. Schofield and Lt. D. Johnson were among those who attended the Fall party at the St. Clair Country Club.

Cpt. and Mrs. E. Lazar have returned from the East. Mrs. Lazar has been visiting relatives in New York for the past Summer months.

Dr. and Mrs. L. Fitzporter, of St. Louis, spent the week-end of October 9th as the guests of Lt. and Mrs. E. Bowling.

Maj. and Mrs. James Mars, of Washington, D. C., and Lt. and Mrs. H. J. Baisley, of Chanute Field, are among the new officers and families on the field.

Capt. A. McDaniels and Lt. J. Moore, of Kelly Field, spent the week end recently with Capt. and Mrs. R. K. Simpson.

(Further Post News on page 167)



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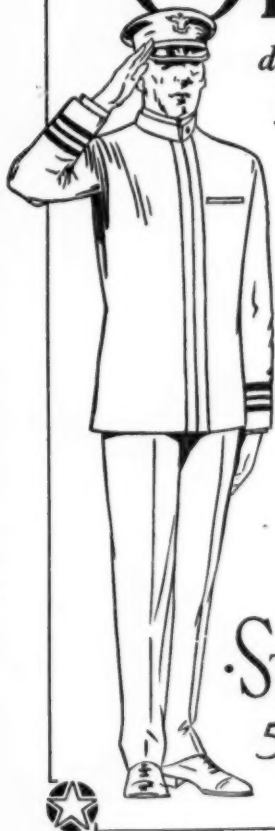
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ATHLETICS AT VARIOUS POSTS

INFANTRY SCHOOL TOPPLES TRANSYLVANIA, 33-0.—The Big Blue eleven which meets Oglethorpe at the dedication of the Doughboy Stadium today defeated Transylvania College of Lexington, Ky., by a score of 33-0 on October 10, in a game much closer and harder than the score would indicate. This gives the Doughboys three straight wins, as they have beaten Stetson, 51-7, and Loyola, 45-0.

A break of luck in grabbing a blocked kick just on the goal line, gave the Infantry a good start. Unable to gain consistently through the doughboy line, the Transylvania team resorted to forward passing and skirting the ends. The aerial game which had enabled them to defeat Cincinnati broke down against the Infantry anti-air defense. The few passes the collegians did complete netted sensational gains.

"Bebe" Daniels, the fleet 130-pound halfback from the 29th Infantry, who has been showing better and better form all season, played ball carrying of stellar grade. The work of the team as a whole was very satisfactory from the standpoint of developing material for the President's Cup eleven. The enlisted line charged harder than the line of the "A" team. The enlisted backfield, piloted by Lieutenant Cole, of the 29th Infantry, and including the Indian Hendrix and Daniels and Buck of last year's President's Cup champions, shone in striking fashion.

Oglethorpe's crew, who meet the Infantry Saturday on the occasion of the dedication of the Doughboy Stadium, are a dangerous outfit, with a 20-0 victory over Center College.

The line-up for the Infantry: Sweeney, l. e.; Mack, l. t.; Schaefer, l. g.; Dwyer, c.; Stanovitch, r. g.; Berry, r. t.; Cornog, r. e.; Smythe, q.; Swantic, l. h. b.; Douthit, r. h. b.; McQuarrie, f. b.

Touchdowns: Sweeney, Smythe (2), McQuarrie, Daniels. Goals kicked after touchdown: McQuarrie (2), Daniels (1).

Infantry	14	6	7	6	—	33
Transylvania	0	0	0	0	—	0

Infantry "B" team which took the field near the close of the first half and remained until the fourth quarter: Neff and Davis, ends; Hesse and McCoy, tackles; Bertelman and Lapine, guards; Buck, Cole, Daniels and Hendrix, backs.

FORT SNELLING HAS NEW ATHLETIC POLICY.—A new policy is being pursued at Fort Snelling, Minn., with regard to football and other sports. Fort Snelling has for two seasons been playing a college schedule, meeting the colleges and universities of the Minnesota and Wisconsin State Conferences. In order to make or be eligible for a Post team, an enlisted man must be proficient in his military duties. Similar to college athletics, a student must maintain a certain standard in his studies or otherwise be declared ineligible.

A comprehensive schedule of track and field events, boxing, wrestling, and football is now in effect. In season an inter-company baseball league is organized and a post team plays in the Minneapolis city league which is controlled and operated by the Minneapolis Board of Parks Commission. Last season, Company E of the 3rd Infantry won the championship of the Inter-Company League. The post team finished fourth in the Minneapolis City League.

The football schedule from October 17 is as follows: October 17, Winona Teachers' College, in Winona, Minn.; October 23, St. Thomas Freshmen, St. Thomas College, in Ft. Snelling; October 30, Ripon College (tentative) in Ripon, Wis., and November 11, St. Mary's College of Winona, Minn., in St. Paul.

The St. Mary's game scheduled for November 11 is an annual affair and is sponsored by the St. Paul Post of the American Legion. The Ft. Snelling football team is coached by Capt. Samuel F. Howard, assisted by Captain Butlet and Lieutenant Jordan, all U.S.A. The team is composed of enlisted men only. Lieutenant Lane will coach the basketball team of the post and the company officers will coach their respective company teams for the Inter-Company Leagues.

PARRIS ISLAND MARINES TRAIN FOR BENNING.—The Parris Island Marine football team, coached by Lieutenant Larson, assisted by Eldridge, will prove a worthy foe of the Bug Blue Infantry outfit from Benning when the two meet in Savannah, Ga., on Armistice Day, November 11. They defeated Newberry last week after a hard battle, and expect to win from Ft. Screven today.

When the Marines meet Benning they will be cheered by a host of rooters from Parris Island, led by Brig. Gen. Harry Lee, U.S.M.C. Lt. C. D. Baylis, U.S.M.C., post athletic officer, and Pvt. J. Daniels will be in Savannah a week before the game to make final arrangements.

TILDEN GIVES ARMY FANS A TREAT.—William Tilden, Jr., world tennis champion, played four exhibition matches on the courts of the General Service Schools, Ft. Leavenworth, Kans., recently, at the invitation of Maj. Coleman W. Jenkins, U.S.A., director of the post tennis club. Tilden won one singles set from Manuel Alonzo, Spanish champion, 6-4, and tied the next, 3-3. The doubles matches were evenly divided, Alonzo-Chapin winning the first from Tilden-Coen, 6-2, and Tilden Mayers winning from Alonzo-Chapin in the second doubles match, 6-4. The exhibition matches drew a large audience of Army tennis fans despite the threatening weather.

ARMY SOCCER TEAM IN 1-1 TIE.—The Army soccer team, under Marchand and Captain Kammerer, got under way against Syracuse on October 7, playing a 1-1 tie game, which was called after one extra five-minute period, when darkness finally set in. Baird at center halfback starred.

WINS GOLF HONORS FOR ARMY.

—The Army scored over a large civilian golf representation when Capt. George C. Parkhurst, Inf., U.S.A., won the Francis Scott Key Golf Tournament Championship at the Catoctin Country Club, Frederick, Md., recently.

NAVY SOCCERITES WIN.—The Naval Academy opened its soccer season with a victory at Annapolis on October 10.

Games Scheduled October 24

Army v. St. Louis at West Point.
Navy v. Washington College at Annapolis.
Quantico Marines v. Detroit at Detroit.
Parris Island Marines v. Charleston Marines at Charleston, S. C.
Infantry School v. Catholic University at Doughboy Stadium.

CORPS AREA AND DEPARTMENT ORDERS

4TH CORPS AREA

Headquarters, Atlanta, Ga.

MAJ. GEN. JOHNSON HAGOOD, COMDR.
Col. T. W. Darrah, Chief of Staff.

Leaves.—Leave to Capt. E. G. Cooper, Inf., extended 30 days. Three months to 1st Lt. W. G. Jeffords, Jr., 13th C.A., about November 3. One month to Wm. Officer W. H. Cook, about November 1. One month to Col. R. J. R. Inf., D.O.L., November 1. Three months to Capt. S. McGehee, 13th F.A. Brigade, October 25.

5TH CORPS AREA

Headquarters, Ft. Hayes, Columbus, Ohio.

MAJ. GEN. ROBT. L. HOWZE, COMDR.
Col. T. E. Merrill, Chief of Staff.

Col. W. P. Jackson, Inf., D.O.L., having reported October 8, is announced as National Guard officer, 5th Corps Area, stationed at Ft. Hayes, Columbus, Ohio.

First Lt. J. G. Boykin, Cav., D.O.L., is, at his own request, relieved from further duty as aide-de-camp to Major General Howze, effective October 3.

First Lt. A. P. Fox, 10th Inf., is appointed as aide-de-camp to Major General Howze. Col. R. J. Burt, Inf., D.O.L., instructor, Ohio National Guard, in addition to his other duties, detailed as instructor, Headquarters Detachment, 37th Division, Ohio National Guard. Lt. Col. S. W. Cook, A.S., in addition to his other duties, detailed as C.O. of Norton Field, Columbus, Ohio.

6TH CORPS AREA

Headquarters, Chicago, Ill.

MAG. GEN. WM. S. GRAVES, COMDR.

Col. R. E. Wyllie, Chief of Staff.

Maj. R. Melberg, C.A.C., D.O.L., to Walter Reed Hospital, for treatment.

Leaves.—Three months, November 20, to 2d Lt. T. J. Randolph, 14th Cav., Ft. Sheridan,

8TH CORPS AREA

Headquarters,

Ft. Sam Houston, San Antonio, Tex.

MAJ. GEN. ERNEST HINDS, COMDR.

Col. J. F. Preston, Chief of Staff.

Maj. M. H. Taulbee, F.A. (D.O.L.), Instr., Okla. Nat'l Guard, Oklahoma City, Okla., to take station at McAlester, Okla.

Leaves.—One month and 16 days, December 1, to Maj. E. H. Burgher, M.C. (D.O.L.), Texas National Guard, San Antonio. Two months, October 26, to 1st Lt. S. J. Adams, 1st Inf., Ft. Sam Houston, Tex. Two months, November 2, to 1st Lt. E. M. Starr, 35th Inf., Ft. Logan, Colo. Two months, November 10, to 2d Lt. J. B. Cooley, 7th Cav., Ft. Bliss, Tex.

9TH CORPS AREA

Headquarters, Presidio of San Francisco, Calif.

MAJ. GEN. C. T. MENOHER, COMDR.

Col. A. V. P. Anderson, Chief of Staff.

Second Lt. F. A. Sealey, Inf., assigned to 7th Infantry, Vancouver Barracks, Wash., for duty. Second Lt. M. J. Tierney, Inf., assigned to 4th Infantry, Ft. George Wright, Wash., for duty.

Lt. Col. F. W. Griffin, F.A., to Los Angeles, Calif., for duty with Organized Reserves. Leaves.—Two months, October 20, to Capt. A. P. Croonquist, Inf., Camp Lewis, Wash. Three months, on arrival in U. S., October 31, to Capt. R. N. Mackin, Jr., C.A.C., Ft. Worden, Wash. Two months, October 20, to 2d Lt. F. E. Pirkey, 6th Engrs., Camp Lewis, Wash. Master Sgt. W. D. Harrison, 9th C.A., Harbor Defenses of Boston, to Ft. Hamilton, N. Y., to sail October 28 to San Francisco, thence to Ft. MacArthur, Calif., for duty.

HAWAIIAN DEPARTMENT

Headquarters, Honolulu, H. T.

MAJ. GEN. E. M. LEWIS, COMDR.

Col. A. G. Lott, Chief of Staff.

Capt. J. E. Brannan, 27th Inf., Schofield Barracks, from Honolulu October 24, to New York, and thence to Ft. McPherson, Ga., for duty.

First Lt. W. W. Christian, Inf., D.O.L., from Honolulu October 24, to New York, thence to Ft. Howard, Md., for duty.

First Lt. J. L. Hanley, 64th C.A., from Honolulu October 24, to San Francisco, thence to Ft. Winfield Scott, Calif., for duty.

Second Lt. D. P. Frissell, 19th Inf., from Honolulu October 24, to San Francisco, thence to Presidio of San Francisco.

Chaplain E. J. Griffin, U.S.A., to Schofield Barracks, Hawaiian Division, for duty.

First Lt. J. E. Adams, A.S., Wheeler Field, Schofield Barracks, from Honolulu October 24, to New York, and thence to Ft. Bragg, Pope Field, N. C., for duty.

First Lt. R. A. Dunn, A.S., Luke Field, detailed as assistant to Air Officer, Hawaiian Department.

Second Lt. J. B. Peirce, 19th Inf., from Honolulu October 24, to New York, and thence to Ft. Wadsworth, N. Y., for duty.

Leaves.—Two months and 25 days to Capt. R. F. Teate, 27th Inf., Schofield Barracks, October 24. Two months and 22 days to Capt. J. E. Brannan, 27th Inf., Schofield Barracks, October 24. One month to Capt. G. W. Lester, 21st Inf., Schofield Barracks, December 1.

Four months to 1st Lt. J. L. Hanley, 64th C.A., Ft. Shafter, October 24. Two months to 1st Lt. J. B. Murphy, 8th F.A., Schofield Barracks, about December 1. Four months to 1st Lt. J. E. Adams, A.S., Wheeler Field.

ORDERS TO RESERVES

The following are orders issued from the various Corps Areas and Departments, relating to Reserve officers:

1st Corps Area

Second Lt. E. J. Rogers, Jr., A.S., assigned to 442d Squad Squadron, General Headquarters Group, Boston, Mass.

Second Lt. A. G. Hall, Engrs., assigned to 413th Engineers Battalion, XI Corps, Worcester, Mass.

Second Lt. I. M. Flanders, Ord., assigned to 8th Ordnance Co., 9th Division, Regular Army, Watertown Arsenal, Mass.

Second Lt. J. W. Cutler, A.S., assigned to 252d Observation Squadron, XI Corps, New Haven, Conn.

Second Lt. W. M. Fraser, A.S., assigned to 444th Pursuit Squadron, General Headquarters Group, Cambridge, Mass.

First Lt. R. L. Moore, Med., assigned to 6th Surgical Hospital, 2d Army, Boston, Mass., as assistant operating surgeon.

Second Lt. W. G. Cronin, C.A., assigned to 544th C.A.

Capt. R. C. B. Ellard, Cav., attached to 62d Cavalry Division.

Capt. F. W. Godwin, Inf., assigned to 80th Division.

First Lt. G. T. Price, Jr., Q.M., assigned to 98th Division.

Second Lt. J. A. Payne, F.A., assigned to National Guard of Maryland.

Second Lt. W. F. Mills, Sig., attached to 107th F.A., National Guard of Pennsylvania, for training.

6th Corps Area

Maj. T. V. Ramsey, Engrs., attached to 505th Engineer Battalion (Ry.).

Capt. F. W. Armitage, Inf., to active duty October 31, at Chicago.

Capt. A. W. Christensen, Med., assigned to Interior Installations, Camp Grant, Ill., as surgical ward officer.

Capt. D. B. Newton, Dent., assigned to 12th General Hospital as dental surgeon.

Capt. W. N. Scharff, C.A., assigned to 531st C.A., Regiment.

First Lt. V. C. Abbott, Med., assigned to 111th General Hospital as surgical ward officer.

9th Corps Area

First Lt. J. J. Moore, Engrs., assigned to Headquarters and Service Co., 349th Engrs., G.S. Regiment, IX Corps.

Second Lt. E. B. Boust, Cav., assigned to 162d Cavalry Brigade, 6th Army.

Second Lt. G. L. Oliver, F.A., attached to 188th Artillery Brigade, XIX Corps.

Second Lt. L. L. Holgate, F.A., assigned to 188th Artillery Brigade, XIX Corps.

The following Reserve officers assigned to 96th Division: Capt. F. L. Dean, Ord., and 1st Lt. E. P. Walters, F.A.

Capt. D. S. Beals, Fin., to active duty November 1, to Seattle, Wash., for temporary duty as student officer.

RESERVE OFFICERS APPOINTED AND PROMOTED

The following are official lists from the War Department of Reserve officers who have accepted appointment or promotion in the grades noted and on the dates named:

Appointments, October 8, 1925

Anderson, C. T., second lieutenant, Q.M., Oneida, Kans.

Barnes, A. L., first lieutenant, Q.M., Mt. Vernon, N. Y.

Barnett, M., first lieutenant, M.A., Ft. Jay, Governors Island, N. Y.

Bruce, R. J., second lieutenant, M.A., Ft. Ogdensburg, N. Y.

Burke, F. F., second lieutenant, F.A., New York, N. Y.

Clarke, S. M., captain, A.G., Landover, Md.

Coffey, J. L., second lieutenant, Q.M., Stillwater, Okla.

Costello, M. M., second lieutenant, Q.M., Racine, Wis.

Crawford, P., second lieutenant, Q. M., Alpine, Tex.

Culbertson, A. J. O., second lieutenant, Q.M., New York, N. Y.

Grauman, J. A., first lieutenant, Q.M., Camp Normoyle, Tex.

Fibich, T. S., second lieutenant, Q.M., Brooklyn, N. Y.

Flint, H. O., second lieutenant, Q.M., South Royalton, Vt.

Hefferman, L., second lieutenant, Q.M., Ft. Oglethorpe, Ga.

Hughes, R. K., captain, Q.M., Asheville, N. C.

Morse, R. A., second lieutenant, Ing., Derry, La.

Reutlinger, A., captain, Q.M., Louisville, Ky.

Richmond, G. Z., second lieutenant, Inf., Omaha, Nebr.

Rountree, J. H., Jr., second lieutenant, A.S., Taunton, Mass.

Royster, O. J., second lieutenant, Q.M., Fayetteville, N. C.

Sanford, H. N., first lieutenant, Med., New Haven, Conn.

Shunk, C. H., second lieutenant, Cav., Milton, Pa.

Swindell, E. J., second lieutenant, Q.M., Hot Springs, S. Dak.

Veitch, A. H., second lieutenant, C.A., Seattle, Wash.

Voa, R. N., second lieutenant, Q.M., Muskogee, Okla.

Promotions, October 8, 1925

Jones, C. A., Jr., first lieutenant, A.S., Birmingham, Ala.

Knight, G., major, Q.M., Omaha, Nebr.

Munn, J. A., captain, Med., McAlester, Okla.

Nathanson, Y. S., captain, Q.M., Upper Darby,

WARRANT OFFICER, U.S.A., COMPLETE COURSE AT MUSIC SCHOOL.—The following warrant officers have just completed the Special Band Leaders' Course, The Army Music School, at Washington, D. C.: J. A. Dapp, Tank School Band; T. F. Darcy, The Army Music School; C. W. Ferguson, 6th F.A. Band; E. A. Halloway, 6th Inf. Band; K. Hebert, 3d Cav. Band; P. E. Melrose, 13th C.A. Band.

Twelve soloists and seventy-three bandsmen students have completed the soloist and bandsmen's courses, respectively, during the year ending September 30, 1925.

The following enlisted candidates have successfully passed the annual competitive examination for entrance to the regular band leaders' course, which commenced October 1, 1925: Sgt. M. Franulo, Cpl. F. Dodge, Pvt. (1cl.) A. Andrews and C. W. Cook.

The following warrant officer band leaders have enrolled in the special band leaders' course, which commenced October 1, 1925: R. O. Dickson, A. A. Jason, T. Lipartiti, O. F. Luedtke, W. W. Sidwell and LeR. C. Sleeper. The Army Music School began its 15th year on October 1, 1925.

WAR DEPARTMENT PUBLICATIONS.—The following publications have been received at the War Department during the past few days: TR 200-10, Scouting and Patrolling, Mounted; AR 260-10, Flags, Colors, Standards and Guidons—Description and Use; AR 105-30, Signal Corps—Commercial Telephone, Telegraph and Electric Time Service, General; AR 40-1005, Medical Department—Reports, Returns and Records; AR 45-30, Changes No. 1; AR 90-40, Coast Artillery Corps—Harbor Defense; AR 515-265, Changes No. 2; AR 30-2110, Changes No. 1; AR 35-840, Changes No. 2; TR 435-280, Coast Artillery Corps—Gunnery for Heavy Artillery; AR 30-2210, Quartermaster Corps—Allowance—Ration; AR 35-6560, Finance Department—Receipt, Shipment and Issue of Property; AR 40-1035, Medical Department—Standard Form for Diagnosis; AR 35-320, Changes No. 2; AR 260-10, Changes No. 1, and TR 425-15, Cavalry—General Principles and Definitions.

MEN IN IRELAND ANXIOUS TO JOIN U. S. ARMY.—A unique offer has been made to Col. James T. Dean, U.S.A., recruiting officer in New York City, through a letter just received from four young men in County Kildare, Ireland. The letter, couched in scholarly language, expresses their desire to become American citizens through first proving their worth in the American Army. The young men are: Peter Behan, 18, and winner of two scholarships; Robert Foster, 19, who is working his way through school; James Fleming, 18, and Andrew Murphy, 19, both motor mechanics' apprentices.

The question of pay, the letter proceeds, matters very little. They wish to become recruits in the U. S. Army, if necessary without pay. They also waive the right, of which the ordinary recruit is usually very jealous, to select the organization and station in which they will serve.

Colonel Dean has written to the young men that they must immigrate in the usual manner. When they arrive in New York and secure their declarations of intention to become citizens, and if physically qualified, their applications will receive careful consideration. They were also advised of the law which requires all young men not of age to have the written consent of their parents or legal guardians before they can be accepted for enlistment.

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THE FINANCIAL DIGEST

The statements made herein are based upon information and statistics which we consider reliable. But as not made upon our personal knowledge we do not guarantee their correctness.

By RAYMOND V. SYKES

One of the most trying problems that the American investor has had to face during recent years is to decide what should be done with his electric street railway securities. He has seen the cost of labor and materials used by the electric railways increase approximately 100 percent since 1912, and taxes almost double, while revenues have gained only about 50 percent. Before the war only 59.9 percent of total receipts were expended in operating costs, but in the first six months of 1925, 72.7 percent was so expended.

Broadly speaking, the future is hopeful. The demand for transportation by public carriers is certain to continue simply because cities cannot build streets fast enough, nor pay for them fast enough, to furnish space for private motor cars for all riders.

The old methods of the street railway companies in meeting this demand must be altered, and a form of service substituted that will attract more patrons. An adequate fare is essential, but increasing fares alone is not the solution, and a level could be reached that would be more harmful than beneficial.

E. C. Cobb, vice-president of Hodespyl, Hardy & Co., and operating head of that firm's railway properties, is a leader in the endeavor to put the street railways on a paying basis through increased patronage. The city of Grand Rapids, Mich., was selected as a sort of experimental laboratory by Mr. Cobb. The Grand Rapids Railway Company is meeting with notable success in attracting new business. The methods being followed there are of interest to every holder of electric railway securities.

The first step in popularizing street car riding was to develop an entirely new, almost

noiseless car in place of the old-time "rattler." Equipment manufacturers were consulted and orders placed for three types of cars, known as the "Minnesota," "St. Louis," and "Ohio." Each car has special features, including roller bearing trucks with rubber insulation in the wheels to eliminate noise, and spring construction of a kind to insure easy riding. Stop lights on the rear are turned on automatically when the brakes are applied. A treadle at the door upon which the passenger stands when ready to alight opens the door after the car has been brought to a stop.

Particular attention has been paid to securing good lighting and newspaper vending boxes. The electric heaters are thermostatically controlled in order to maintain an even temperature. The upholstering is respectively rattan, leather, and plush, for the three types of cars. Through a monthly publication distributed to car riders and civic organizations a referendum was taken as to which car was preferred.

Special attention is being paid to the appearance of the motormen and conductors, a new uniform being adopted. Courtesy on the part of employees is emphasized. Any complaints are adjusted by a personal visit, instead of by letter. Many other similar efforts are engaged in to build good will and win back the public to electric railway transportation. Motor bus service is used in supplementing the street car service as feeders to the existing lines.

Much favorable comment is heard on the part of the citizens of Grand Rapids over the efforts of the company to please and a 30-year service-at-cost franchise was approved by 72 percent of the voters. The new cars operate at a 24.5 percent saving in cost per mile. Injuries to employees have been reduced 19 percent. Running time has been speeded up 9 percent. Collisions have been reduced 23.7 percent through fostering a Commercial Drivers' Club. The achievement of this company is remarkable and others of the street railway concerns can profit from its leadership.

NAVY, U. S. M. C., AND NAVAL RESERVE NEWS

CAPTAIN DISMUKES, U.S.N., RETIRED AS A REAR ADMIRAL.—Capt.

Douglas E. Dismukes, U.S.N., commandant of the Portsmouth Navy Yard, was retired from active service on October 1, 1925, with the rank of rear admiral. At the appointed hour his flag was hoisted to the masthead on the Administration Building. The exercises were attended by the official heads of the yard, commanders and officers of ships at the station. The yard Marine Guard was lined up and the yard band played the Admiral's march. Rear Admiral Dismukes was assigned to the Portsmouth Navy Yard on January 16, 1923, and is one of the most efficient, capable, and courteous officers that the local naval station has had for years. He has been popular with all classes of officials and civilian employees, and he leaves the active Service with a most excellent record and with the sincere good wishes of all who have enjoyed his acquaintance. His gallant action and fine display of seamanship in the saving of the Mount Vernon when it was torpedoed in September, 1918, was recognized by letters of commendation from the Navy Department, the Commander-in-Chief of the Expeditionary Forces, and the Commander-in-Chief of the naval forces. It was because of this action that Congress in special legislation gave Captain Dismukes upon retirement the rank of Rear Admiral.

MARINE CORPS

GENERAL LEJEUNE, U.S.M.A., LAYS WREATH AT PULASKI'S MONUMENT.—The 146th anniversary of the death of Count Casimir Pulaski,

the gallant Polish soldier who was a member of General Washington's staff in the Revolution, was appropriately observed by the District of Columbia chapter, Sons of the Revolution, on October 12, Maj. Gen. John A. Lejeune, commandant of the U. S. Marine Corps, placing a wreath at the foot of Pulaski's monument, 13th and Pennsylvania Avenue, Washington, D. C.

Chaplain E. W. Scott, of the Marine Corps, pronounced the invocation, and the United States Marine Band played the Polish national anthem, the Marseillaise, and the Star Spangled Banner.

The following members of the Sons of the Revolution comprised the committee in charge of the ceremony: Brig. Gen. Dion Williams, Brig. Gen. Charles L. McCawley, Col. George C. Thorpe, Col. William C. Harlee, Lt. Col. Edward A. Greene, Lt. Col. Charles T. Westcott, Maj. Julian P. Willcox, Maj. Julian C. Smith, 1st Lt. William C. Hall, all U.S.M.C., and Capt. George R. Jackson, former Marine officer.

COLONEL MYERS TO COMMAND FIRST BRIGADE IN HAITI.—Brig.

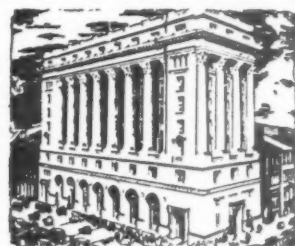
Gen. B. H. Fuller, U.S.M.C., who has been in command of the first brigade in Haiti, will be relieved of this command sometime in November by Col. J. T. Myers, U.S.M.C., who will be detached from the Marine base at San Diego. Up to the time that the ARMY AND NAVY JOURNAL went to press the new assignment of General Fuller had not been decided upon.

NAVAL RESERVE

DESTROYER ALLEN ASSIGNED TO DISTRICT OF COLUMBIA NAVAL

RESERVES.—The U. S. destroyer Allen, Lt. Comdr. Alfred S. Wolfe, has been assigned as the training ship for the Naval Reserves of the District of Columbia and is now at the Washington Navy Yard. During the Winter the Reserves will perform weekly drills aboard the Allen, and will be assigned to the duties they would perform in active service according to their respective ratings.

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LATE WAR DEPARTMENT ORDERS

(Continued from page 151)

November 1, at Washington, D. C., for training. (October 12.)
First Lt. A. B. Williams, C.E., to active duty October 15, at Engineer Reproduction Plant, Washington Barracks, for training. (October 13.)

S. O. 243, W.D., October 14, 1925

Capt. E. S. Van Deusen, Q.M.C., to Ft. Hancock, N. J., for duty.
Medical Corps.—Capt. C. A. Stammel, Jr., to El Paso, Tex., December 15 for duty at W. Beaumont Hospital. Capt. W. W. McCaw to Ft. Sam Houston, Tex., for duty at hospital, December 15. Maj. L. R. Poust to Ft. Sam Houston Hospital, for duty. Maj. H. C. Moore to Letterman Hospital, California, for duty.
Veterinary Corps.—First Lt. L. W. Ingram to Ft. Bliss, Tex., to duty February 10. Second Lt. E. E. Hodgson to Front Royal Q.M. depot, Virginia, for duty.
Infantry.—Capt. W. L. Coulter, 34th Inf., to New York and sail on January 6 to Philippines, for duty. First Lt. J. L. Keasler, 17th Inf., to University of Kentucky, Lexington, for duty.
Resignation of Warrant Officer H. Holland accepted.

Sergeant C. Smith to D.E.M.L. and to duty with Georgia National Guard, instructor Cavalry. Army Field Clerk T. W. Greer to Headquarters 4th C.A., Ft. Hayes, Ohio, for duty. Army Field Clerk H. F. Meyers to 4th C.A., Atlanta, Ga., for duty.

Leaves.—Two months and 23 days to 1st Lt. D. L. Hutchins, A.S., October 24. Three months' sick leave to Warrant Officer H. E. Hill, October 17. Leave granted Capt. H. S. Thomas, S.C., extended one month and four days. One month and seven days to Maj. C. W. Thomas, Jr., insp. gen., on arrival in San Francisco.

Retirement of Enlisted Men.—The following enlisted men will be placed on retired list at places indicated: Master Sergt. J. Young, 3d Inf., at Ft. Snelling, Minn. Tech. Sergt. F. Schwed, Q.M.C., at Ft. Sam Houston, Tex.

Organized Reserves.—First Lt. D. E. Davis, Q.M.C., to active duty October 21, at Chicago Q.M. Depot for training.

The following officers of the Q.M.C., to active duty November 1, at Ft. Mason, Calif., for training: Capt. S. B. Britton, Capt. J. R. Doolin, Capt. J. D. Schoemaker, 1st Lt. E. X. Dendrich, 2d Lt. E. S. Curtis, F. B. McLane and V. E. Ryan.

ARMY PROMOTION STATUS

Last promotion to grade of colonel.—Alexander Gregg, Jr., C.A.C., No. 10, on page 147 (July Army List and Directory.)

Vacancies.—None.

Senior lieutenant colonel.—Allen D. Raymond, C.A.C.

Last promotion to grade of lieutenant colonel.—William W. Gordon, Cav., No. 589 on page 149.

Vacancies.—Two. Officers entitled:

Frank L. Pyle, Inf.

Walter O. Boswell, Inf.

Senior major if vacancies were filled.—Raymond S. Hamberger, A.G.D.

Last promotion to grade of major.—Benjamin W. Mills, Inf., No. 2323 on page 155.

Vacancies.—Four. Officers entitled:

Thomas F. Taylor, Inf.

Marshall H. Quisenberry, Inf.

Richard W. Cooney, Cav.

Daniel A. Connor, F.A.

Senior captain if vacancies were filled.—George Mayo, Corps of Engrs.

Last promotion to grade of captain.—Frank S. Manfield, Inf., No. 5506 on page 166.

Vacancies.—Six. Officers entitled:

Ralph C. G. Nemo, Inf.

Ross F. Cole, A.S.

John P. Lake, Inf.

Heston R. Cole, Engrs.

Russel B. Reynolds, Inf.

Harold D. Dinsmore, Inf.

Senior 1st lieutenant if vacancies were filled.—Paul C. Boylan, F. A.

Last promotion to grade of 1st lieutenant.—Charles M. Adams, Jr., Inf., No. 8494 on page 177.

Vacancies.—Eight. Officers entitled:

Frank H. Blodgett, Inf.

John F. McBlain, A.S.

Richard M. Costigan, F.A.

Gustave H. Vogel, C.A.C.

Basil G. Thayer, Cav.

Edward J. Sullivan, C.W.S.

James P. Barney, Jr., F. A.

Wilbur S. Nye, F.A.

Senior 2nd lieutenant if vacancies were filled.—Charles H. Swartz, F.A.

Vacancies in grade of 2nd lieutenant.—103.

COMPTROLLER GENERAL'S DECISIONS

THE Comptroller General sustained a settlement disallowing the claim of Maj. A. G. Rudd, U.S.A., Ret., for a refund of \$50 collected from his pay in March, 1924, for overpayments. The decision stated that claimant rated payment under section 1 of the joint service act effective July 1, 1922, for rank and length of service to active duty pay of \$220 a month, and from July 18, 1922, of \$230 a month for having completed nine years' service. Pay received in excess of these amounts was held to be erroneous.

A CLAIM for the difference between the pay of a lieutenant colonel and major for service as professor of law at the Military Academy from 1923 to 1925 by Maj. E. C. McNeil, J.A.G., U.S.A., was disallowed. The Comptroller held that no appropriations were made since the Act of June 4, 1920, for additional pay for officers assigned to that duty.

THE settlement of Ens. G. W. Allen's case disallowing claim for difference in pay of an ensign after three years' and fifteen years' service on the ground that he was appointed a commissioned officer after June 30, 1922, was sustained. Comptroller McCarl based his decision on the construction of the term "officers" in Section 1 of the Act of June 10, 1922, relative to longevity pay, which he alleged takes in warrant as well as commissioned officers.

IN the case of a corporal of the Marine Corps whose pay was withheld for absence from duty in hospital due to treatment required for a venereal disease, the Comptroller declares the checkage of pay was proper and quotes at length from reports and regulations of the Army and Navy concerning this method of punishing moral delinquents.

COMMANDER COX'S CASE REACHES COURT OF APPEALS.—The test case brought by Comdr. John F. Cox, U.S.N., and which was followed by 98 other Navy officers whose pay was curtailed by Comptroller General McCarl, 20 percent, on the theory that they had been erroneously paid money for dependents, has at last reached the Court of Appeals of the District of Columbia for a determination as to the legal authority of Mr. McCarl to deduct the 20 percent. The lower court held that Congress and not the comptroller had the say about the amount which should go in a naval officer's pay check. The appellate court has the case under advisement.

ORDERS FOR NAVY

(Continued from page 157)

Comdr. R. D. Workman (Ch.C.) to U.S.S. California.

Ch. Bos'n J. D. Glick to 11th Nav. District.

Ch. Gun. S. A. Devlin to U.S.S. Pennsylvania.

Ch. Machs. S. S. Halliburton to temp. duty

Nav. Aircraft factory Philadelphia, Pa.; C. M.

Leslie to U.S.S. West Virginia; G. W. Weaver

to U.S.S. Altair.

Ch. Carps. John A. Nicol to U.S.S. Colorado;

E. F. Smith to U.S.S. California; W. J. Water-

worth to U.S.S. Relief.

Ch. Phar. T. C. Hart to 16th Nav. Dist.

Pay Clks. C. O. Hamrick to Nav. Trng. Sta.,

11th Nav. Dist.; R. Hendon to continue treat-

ment, Nav. Hosp., San Diego, Calif.; I. L. Ludlam

to U.S.S. West Virginia.

October 9, 1925

Capt. S. E. Moses to Naval Examining Board,

Navy Department.

Comdr. A. S. Carpenter to executive officer,

U.S.S. Pittsburgh.

Lts. S. C. Dougherty to Naval Academy; L. H.

Wentworth to U.S.S. Brazos.

Lts. (j.g.) H. B. R. Jorgensen to command

U.S.S. Widgcon; J. R. Kilvin, resignation accepted

October 18, 1925.

Capt. E. Thompson (M.C.) to member of Nav.

Exam. Board, Nav. Ret. Board and Board of

Med. Exam., Navy Department.

Lt. Comdr. W. G. Steadham (M.C.) to aide

and Sqdns., Med. Off. on staff, Comdr. Dest.

Sqdns., Setz. Fleet.

Lt. E. C. Ebert (M.C.) to duty with Sanitary

Engineer of Haiti.

Lt. Comdr. R. J. Trout (M.C.) to navy yard,

Boston, Mass.

Lts. C. E. Hall (D.C.) to navy yard, Mare

Island, Calif.; J. H. Gallion (S.C.) to Naval

Air Station, Pensacola, Fla.; W. Gross (S.C.)

to 9th Nav. Dist., Great Lakes, Ill.; F. P.

Kenny (S.C.) to such duty 9th Nav. Dist.,

Qrs. June 23, 1925, revoked.

Lts. E. W. Willett (D.C.) to Nav. Trng. Sta.,

N.O.B., Hampton Rds., Va.; R. G. Mayer (C.C.)

to Nav. Air Sta., Pensacola, Fla.

October 10, 1925

Capt. P. Williams, Ret., to home.

Comdr. W. G. Roper to home.

Lt. Comdr. R. W. Cary to aide on staff,

comdr., Battleship Div. 3, Battle Fleet.

Lts. R. W. Bowers to navy yard, Mare Island,

Calif.; J. J. Cullen to navy yard, New York;

R. E. Permut to navy yard, Puget Sound, Wash.

Lt. (j.g.) J. G. Jones to Aircraft Squadrons,

Battle Fleet.

Lt. Comdr. J. Buckley (M.C.) to U.S.S.

Omaha; T. G. Foster (M.C.) to U.S.S. Sapelo.

Lt. T. O. Summers (M.C.) to Nav. Hosp.,

Norfolk, Va.; R. S. Davis (D.C.) to Nav. Hosp.,

New York; F. J. Manley (S.C.) Upon completion

settlement cases, det. 11th Nav. Dist.

Lt. Comdr. H. M. Peterson (Ch.C.) to Marine

Corps Base, N.O.B., San Diego, Calif.;

Lt. L. J. Maxson (C.C.) to Naval Aircraft

Factory, navy yard, Philadelphia, Pa.

The following dispatch was received from C. in C. Asiatic, dated October 8, 1925: Lt. (j.g.) Claiborne J. Walker to U.S.S. McCormick; and Ch. Bosn. Garrison Payne to Naval Station, Cavite.

October 12, 1925

Lts. L. K. Beaver to Rec. Ship, Charleston, S. C.; G. R. Bostain to U.S.S. New Mexico; F. O. Goldsmith to U.S.S. Argonne; W. P. Rodman to U.S.S. Gold Star; M. P. Wilson to U.S.S. California. Ors. 17 Sept. 1925, to U.S.S. Widgcon, revoked.

Ens. W. W. Agner to Nav. Trng. Sta., N.O.B. Hampton Roads, Va.; J. R. Andrews to temporary duty Nav. Trng. Sta., N.O.B. Hampton Roads, Va.; W. C. France to U.S.S. Farquhar; A. L. Pleasants to continue duty U.S.S. Texas.

Lt. C. R. Riney (M.C.) to Nav. Hosp., Mare Island, Calif.; Lt. j.g. G. R. Murray (M.C.) det. from all duty; to resignation accepted 15 Oct. 1925.

Lts. T. W. S. Runyon (S.C.) to settle acct., 4th Nav. Dist.; G. O. Tasker (S.C.) to such duty navy yard, Philadelphia, Pa.

Comdr. H. S. Dyer (Ch.C.) to U.S.S. Arizona; Lts. R. W. Truitt (Ch.C.) to U.S.S. Maryland; R. G. Mayer (C.C.) to Nav. Air Station, Lakehurst, N. J.

Bosns. H. M. Brun to U.S.S. New Mexico; J. F. Jeter to Rec. Ship, Puget Sound, Wash.; Ch. Mach. W. H. Muehlhaue to navy yard, Wash. D. C.; Mach. John W. Cunningham to U.S.S. Richmond; Ch. Carp. M. De Milt to U.S.S. Rigel.

E. El. D. S. Green to U.S.S. Arizona; A. D. Walker to U.S.S. Wyoming; Ch. Pay Clk. J. J. Shea to 16th Nav. Dist.; Pay Clk. J. K. Chisholm to Nav. Hosp., Norfolk, Va.

October 13, 1925

Lt. Comdr. T. L. Gatch to Office of Judge Adv. Gen., Navy Dept.

Lts. H. D. Clarke to U.S.S. McCawley; M. Moses to continue U.S.S. Maryland; F. Strothe to U.S.S. Arkansas; Lts. (j.g.) W. H. Healy to continued treat. Nav. Hosp., Boston, Mass.; R. D. Sollars, to Rec. Ship, Puget Sound, Wash.; J. G. Winn to obs. and treat. Nav. Hosp., New York.

Ens. H. D. Batterson to U.S.S. West Virginia; A. E. Harris to U.S.S. Brazos; B. B. Harrison, Jr., to U.S.S. King; O. A. Kneeland to U.S.S. Hannibal; V. D. Long to U.S.S. Arizona; W. A. Riley to U.S.S. Childs; J. A. Traylor to U.S.S. West Virginia; F. S. Withington to U.S.S. West Virginia.

Lt. F. S. Johnson (M.C.) to Rec. Ship, San Francisco.

Ch. Bosns. W. E. O'Connell Det. U.S.S. Procyon when directed by Comdr. Flt. Base Force; J. A. Pierce to U.S.S. Relief; E. R. Wroughton, to U.S.S. Quail.

Bosns. M. H. Clark to duty U.S.S. Grebe; G. Witham to U.S.S. Umpqua; Ch. Gun. R. Semple to Rec. Ship, San Francisco.

Guns. J. B. Ayres to U.S.S. Gold Star; H. T. Peterson to duty Rec. Ship, Boston, Mass.; Ch. Mach. A. B. Provost to U.S.S. Florida; Mach. D. O. Du Bois to N.S.S. Gannet; R. El. J. M. Kane to U.S.S. Shawmut.

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PUNISHED FOR VIOLATING TRAFFIC LAW.—Lt. John M. McDonnell, A.S., U.S.A., stationed in the office of the Chief of Air Service, Washington, D. C., was sentenced to 30 days in jail October 14, for colliding with an automobile owned by Rear Adm. W. H. Brownson, U.S.N., and leaving the scene of the accident without disclosing his identity. Lieutenant McDonnell testified that he was driving slowly and could hardly see for the rain. He had the right of way, he declared, and after the collision he turned his car around and saw that no one had been hurt. Then he went on his way. Judge McMahon, after hearing the officer's statement, imposed the heavy jail sentence which Lieutenant McDonnell began serving at once.

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SOCIAL HAPPENINGS IN THE SERVICES

PERSONALS

(Continued from page 158)

in Walter Reed Hospital, has been convalescing in New York and Connecticut. After a short stay at the Hotel Martinique, Washington, D. C., Mrs. Wright will return to Copley Courts, where she will be joined by her daughter, Mrs. H. W. Smith, who later will join Mr. Smith in an expedition into the interior of South America.

Mrs. Gordon Robinson, widow of Lieutenant Colonel Robinson, U.S.A., and her daughter, Margaret, are at 364 Audubon Street, New Orleans, La. The remains of Lieutenant Colonel Robinson were buried in the family cemetery at New Orleans, on October 5, 1925.

Brig. Gen. David P. Barrows, California N.G., was the speaker of the day at the luncheon of the Association of the Army of the United States, given October 13 at the Colonial Ballroom of the St. Francis Hotel, San Francisco. His topic was "The General Moroccan Situation."

Col. Mathew C. Smith, U.S.A., formerly on Organized Reserve duty in Cincinnati, is now liaison officer to the Organized Reserves, Headquarters 5th Corps Area, relieving Brig. Gen. Charles D. Rhodes, U.S.A. Maj. James H. Johnson is his assistant. Headquarters, Artillery Group, Organized Reserves, for the 5th Corps Area, has been established at Cincinnati, with Lt. Col. Lewis S. Ryan, Field Artillery, U.S.A., as chief of staff. Lt. Col. John R. Musgrave, Coast Artillery, U.S.A., has reported for duty at the Artillery Group Headquarters.

Gov. E. Lee Trinkle of Virginia, and Adm. W. S. Benson, U.S.N., will speak at the ceremonies at Yorktown October 19, marking the surrender of General Cornwallis. One of the features of the celebration will be the dedication of two sites for two monuments to be placed upon the battlefield.

Capt. Stanford F. Moses, U.S.N., was relieved in command of Aircraft Squadrons Battle Fleet by Capt. J. M. Reeves on U.S.S. Langley at Mare Island, October 13.

Gen. Charles King (lieutenant colonel, U.S.A., retired), supervisor of military training at St. John's, at Delafield, Wis., and ever since the founding of the school a close worker with the institution, celebrated his eighty-first birthday on Monday, October 12. To see the erect, neat-appearing figure of the general as he passes about the school, keeping in touch with the various details of the military work of the corps, and to note his energetic commands and his animated discussions whenever questions of tactics arise, one finds it hard to realize that this soldier is of three generations of service.

"Quite justly proud are the cadets of St. John's to be serving under so real a soldier," says the Cadet Review. "And quite as justly proud are all friends of the school to be associated with this soldier-author. May he train us for many years to strive toward such goals as he, himself, has reached."

The following officers sailed, October 12, on the U. S. Army transport St. Mihiel from Panama for New York, and were granted leaves to the termination of their foreign service tours, to the dates given preceding their new assignments: Col. Albert R. White, D.C., December 29, to Fitzsimons General Hospital, Denver, Colo.; Capt. Andrew W. Smith, M.C., December 3, to Bolling Field, D. C., and Frank E. Shaw, Inf., February 17, to 28th Inf., Ft. Ontario, N. Y.; 1st Lt. Lewis S. Webster, A.S., December 29, to Langley Field, Hampton, Va., and Warrant Officers Jacob Mary, February 17, to Q.M., Ft. Benning, Ga.; Dennis F. Murray, December 29, to Hdqrs. 2nd Corps Area, Governors Island, N. Y., and Edward Power, November 28, to Hdqrs. 3d Corps Area, Baltimore, Mo.

Capt. Arthur Kingston, U.S.M.C., was awarded a final decree for absolute divorce October 15, 1925, by Chief Justice Walter I. McCoy in equity court of Washington against Mrs. Blanche Kingston, whom he married August 3, 1920.

ENGAGEMENTS

(Continued from page 158)

tioned in the office of the Chief of Air Service at Washington. The wedding date has been set for November 14, 1925.

Schlatter—Bertrand.—Mrs. Annie Oge Wicks announces the engagement of her daughter, Lorraine, to Lt. David Schlatter, A.S., U.S.A., the wedding to take place November 5, 1925, San Antonio, Tex.

Roper—Storms.—Mr. and Mrs. Arthur Storms announce the engagement of their daughter, Estelle, to Lt. Harry McKenzie Roper, U.S.A. The wedding will be solemnized on November 10, 1925, at San Antonio, Tex.

WEDDINGS

(Continued from page 158)

Colonel Huntington was on duty. She has a particularly large circle of friends throughout the Peninsula of Virginia, where she has frequently visited at Fts. Monroe and Eustis and at Lee Hall. The newly married couple sailed for Hawaii, via Panama, on the U.S.A.T. Somme on September 22, 1925.

BIRTHS

(Continued from page 158)

St. Luke's Hospital, Davenport, Iowa, on October 4, 1925, a son.

Waderton.—Born to Capt. Thomas D. Waderton, Jr., Cav., U.S.A., and Mrs. Waderton a son, Thomas D. III, on September 4, 1925, at London, Eng.

Hall.—Lt. William Carvel Hall, U.S. M. C., and Mrs. Hall announce the birth of a daughter, Mary Clare, on October 9, 1925, at Columbia Hospital, Washington, D. C.

McMillin.—Born to Capt. and Mrs. Douglass N. McMillin, Inf., U. S. A., a daughter, Marcia, at Chattanooga, Tenn., October 5, 1925.

OBITUARIES

(Continued from page 159)

eral Staff Corps, U.S.A.; a brother, W. A. Lemly of Winston-Salem, N. C., and a grandson, Richard C. Parker of Los Gatos, Calif. He was a member of the Army and Navy Club of Washington and the University Club of New York. Major Lemly was author of "Who Was El Dorado?" "Among the Arapahoes," "A West Point Romance," other novels and numerous magazine articles. He also translated Upton's Infantry Regulations into Spanish and prepared an English translation of a French manual of strategy.

Lindabury.—Lillie Van Saun, widow of Richard V. Lindabury, mother of Mrs. R. L. Berry, died at Bernardsville, N. J., October 9, 1925.

Philbrick.—J. Curtis Philbrick, father of Lt. Comdr. M. H. Philbrick, S.C., U.S.N., died at Rye, N. H., October 8, 1925.

Lando.—Jacob Lando, father of Comdr. Ellis Lando, U.S.N., died in San Diego, Calif., October 5, 1925, in his 69th year. He was a native of New York State. His wife, one daughter, and two sons survive. Funeral services were held under the auspices of the Masonic and Odd Fellows orders, followed by cremation.

Tilton.—1st Lt. James Frederic Tilton, A.S.R.C., killed in airplane crash at Wilbur Wright Field, Dayton, Ohio, August 6, 1925.

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POSTS AND STATIONS

SAN ANTONIO, TEXAS

Maj. and Mrs. Richard E. Cummins are now in San Antonio, where Major Cummins is stationed at Ft. Sam Houston, and are located in their new home in Terrell Hills.

The permanent officers and student officers at Brooks Field enjoyed a get-together stag poker party at the officers' club on October 9.

The Army circle of St. Paul's Episcopal Church will entertain with a Mexican supper and cabaret, October 22, at the Argonne Heights Officers' Club. Mmes. Ernest Hinds, Paul B. Malone, H. B. Fiske, W. S. Scott, C. C. Cresson, J. C. McArthur, and John F. Preston have been named as sponsors.

Mrs. Rochester McEldowney, who has been visiting her father, Dr. C. S. Venable, of San Antonio, has left for San Francisco. She will sail on the transport to Hawaii, where her husband, Lieutenant McEldowney, is stationed at Schofield Barracks.

Lt. and Mrs. Thomas Edward Lewis entertained with a buffet supper October 16, honoring Miss Estelle Storms and her fiance, Lt. Harry Roper.

GOVERNORS ISLAND, N. Y.

Gen. and Mrs. C. P. Summerall entertained with a dinner party in honor of Mr. Phillip Rhineland. The other guests were Col. and Mrs. T. A. Baldwin, Lt. Col. and Mrs. S. O. Fuqua, General Bullard, Mrs. H. J. Weeks.

Lt. Col. and Mrs. C. M. Eby were supper hosts for Mrs. Sally Marshall, and had as their guests Major and Mrs. Harrell, Lt. Col. and Mrs. L. E. Hansen, Mrs. F. R. Keefer, Colonel Game, Maj. and Mrs. H. W. Fleet, and Mrs. Potter.

The bachelors of the 16th Infantry gave a surprise birthday dinner for Capt. J. F. Gleaves at the Officers' Club. The guests were Capt. and Mrs. A. S. LeGette, Captain and Mrs. Brown, Colonel Watson, Captain and Mrs. Van Voorhes, Captain and Mrs. Gillfillan, Lts. and Mmes. Kron, John Bruckner, Tagliabue, and C. R. Smith, Misses Julie Campbell, King, Jeanette Fuqua, Captain Phipps, Lts. Mason, Holman, Heyward Roberts, Urbrock, Henry Dupree, Bennett, Stevenson, and Mr. Allan Campbell.

Mrs. C. P. Summerall spent last week-end with her sister, Mrs. Miley, of Philadelphia.

The Governor's Island Card Club met at the Officers' Club, with Mrs. E. T. Hartman as the hostess.

Col. and Mrs. E. T. Hartman gave a dinner and the guests were, Captain and Mrs. Autrey, Captain Powell, and Lt. George Forster.

Capt. and Mrs. I. H. Engleman, of Ft. Leavenworth, spent last week as the house guests of Capt. and Mrs. J. P. Moore.

CAVALRY SCHOOL, FT. RILEY, KANS.

Mrs. Robert J. Foster was hostess at an afternoon tea for the ladies of the Cavalry School who are members of the National Fraternities.

Mr. and Mrs. S. L. Moyer, who have been visiting their daughter, Mrs. Francis T. Bonsted, have left for their home at Santa Monica, Calif.

The first meeting of the Ladies' Card Club of the Cavalry School was held at the Cavalry School Officers' Club, and twelve tables were used for the games.

Mrs. E. M. Barnum has arrived from Chicago, where she has been visiting her parents.

Mrs. Leroy Davis has left for San Antonio to visit for several months with her parents.

Mrs. H. L. Nix has arrived from New York to visit her daughter, Mrs. Sidney V. Bingham.

Mrs. Otto B. Trigg has returned from a visit of several months with her mother, Mrs. D. M. Buin, of San Francisco.

Mrs. James J. O'Hara will be the society editor of the Standard, the Cavalry School paper.

Maj. and Mrs. Willis D. Crittender were hosts at a dinner in honor of their mother, Mrs. Townsend Woodhull, of San Antonio, and Miss Joan Robinson, their house guest from England.

Mr. Robert McGary, of South Beach, Conn., has arrived to visit his daughter, Mrs. Julian W. Cunningham.

Lt. Col. and Mrs. Copley Enos and Maj. and Mrs. Dorsey R. Rodney were joint hosts at an afternoon tea in compliment to the new students and their wives. Tea was poured by Mrs. E. E. Booth, wife of the Commandant of the Cavalry School, and by Mrs. Edmund L. Gruber, wife of Major Gruber. There were about seventy guests. This was the first of a series of teas which will be given by Colonel and Mrs. Enos and Major and Mrs. Rodney every Wednesday in October.

CHANUTE FIELD, ILL.

Lt. J. M. Weikert has left for his new station, Kelly Field, Tex.

Maj. W. C. McChord entertained at dinner at the Champaign Country Club, honoring Mrs. Lucy Caldwell, of New Albany, Ind. The following guests were present: Mrs. Caldwell, Mrs. Bessie Johnson, Capt. and Mrs. C. B. Bubb, Lts. A. L. Johnson, J. M. Weikert and Raphael Baez.

Lt. R. B. Williams of Mitchel Field, N. Y., was the recent guest of Lt. and Mrs. G. E. Grimes.

Mrs. Lucy Caldwell of New Albany, Ind., is the house guest of Mrs. C. B. Bubb.

Lt. and Mrs. G. E. Grimes recently entertained six guests at dinner.

Maj. Frank D. Lackland and Lt. Clements McMullen were guests of Maj. W. C. McChord recently.

Maj. W. C. McChord had the following guests at dinner at the Southern Tea Room in Champaign: Mrs. Lucy Caldwell, Mrs. H. G. B. DeKruyff Van Dorsen, Capt. and Mrs. C. B. Bubb, Lt. and Mrs. Ivan Proctor and Lt. L. J. Carr of Kelly Field, Tex.

Capt. H. G. B. DeKruyff Van Dorsen has returned to the field after an absence of six weeks spent at Kelly Field, Tex., on the Pacific Coast.

Lt. and Mrs. G. P. Johnson entertained recently with a musical At Home followed by an Italian supper. The following were guests of the evening: Capt. and Mrs. J. J. Devery, Capt. and Mrs. C. B. Bubb, Lt. Caldwell, Lt. and Mrs. G. E. Grimes, Mrs. Van Dorsen, Miss Cox, Mr. and Mrs. J. Wright, Maj. W. C. McChord, Mr. Ashley Feiler, Lts. Raphael Baez, Seibert, W. Ward and F. D. Hackett.

Capt. Oliver W. Broberg has reported for duty.

Numbers of parties of officers, wives and guests attended the opening game of football at the University of Illinois, with Nebraska as Illinois' opponent.

PRESIDIO OF SAN FRANCISCO AND BAY POSTS

Maj. Gen. Charles T. Menoher, U.S.A., and Mrs. Menoher recently entertained 14 guests at a dinner party in their quarters at Ft. Mason, Calif.

Col. and Mrs. James Canby entertained the East Terrace Bridge Club at their quarters in the Presidio.

Miss Katherine Munson, daughter of Col. and Mrs. Edward Munson, was hostess to a group of the younger set at a buffet supper at the Munson home in the Presidio.

Col. and Mrs. H. Lester Archer entertained at dinner eight of their friends at their home in San Francisco recently.

The Officers' Club at the Presidio was setting for a bridge party when the Presidio Woman's Club entertained, with Mrs. Elsie McDonald presiding as hostess. A number of Army matrons entertained small groups of friends from the civilian set, and Mrs. Thomas Stark and Mrs. Carnes B. Lee were joint hostesses at a party of 11 tables. Mrs. Harry Jordan had four tables and several other of the ladies had a table or two. A number of town people, as well as those from the surrounding Army posts, were in attendance.

Mrs. Robert D. Harden, wife of Major Harden, U.S.A., is passing several days in Palo Alto, and upon her return to San Francisco, will prepare for her departure East, where Major Harden has been ordered for duty. Prior to her departure she will be the guest of honor at a number of parties.

Mrs. James C. Kay, wife of Colonel Kay, who has been seriously ill for a month at the Letterman Hospital, is now on the way to recovery and is the guest of her brother-in-law and sister, Col. and Mrs. Peter Marquart, at the Crissy Field Officers' Club.

Lt. and Mrs. Robert Haskell, who have been passing several weeks at Eureka, Calif., plan to return to San Francisco shortly, and after a short stay, will leave for Camp Lewis, Wash., Lieutenant Haskell's permanent station.

FT. THOMAS, KY.

Mrs. I. J. Nichol was at home to the ladies of the Post in honor of her mother, Mrs. Edgar Gordon, of Texas, and her sister, Mrs. Olin Gordon, a recent bride of Ft. Thomas. The tea table was attractively decorated with yellow flowers and tall, yellow tapers in crystal candlesticks. Mrs. Nichol was assisted in caring for her guests by the Misses True Merrill, Mildred Castle, Anna and Betty Nichol. Those who called were Mmes. Dana T. Merrill, L. D. Gasser, T. G. McKenzie, Oscar Kain and her guests, Mmes. McFarlan and Holding, of Tacoma, Wash., Mmes. Ross O. Baldwin, R. S. Gessford, W. C. Smith, John C. McNally, Bozier Castle, A. D. Warnock, P. E. Tripp, F. G. Potts, M. E. Halloran, T. J. Cassidy, J. J. Yeats, A. V. Thorpe, C. C. Southgate and Miss Betsy Jane Southgate, of Ft. Thomas.

Maj. John C. French, manager of the 10th Infantry polo team, Lt. J. J. Yeats, captain of the team, Capt. M. E. Halloran, Lt. A. P. Fox, Capt. Ross O. Baldwin, and Lt. Lucien F. Wells have returned from Charleston, W. Va., where they participated in the Charleston Horse Show. Captain Halloran's mount, "Scotty," won first place in the heavy polo class; his mount, "Lady Jane," won second in the light polo class; Lieutenant Yeats' private mount, "Muggins," placed third in the heavy polo class, and Captain Baldwin's mount, "Billy," took third place in the light polo class.

Mrs. E. L. Dodge, of Muskegon, Mich., and Mrs. L. A. Morrill, of East Auburn, Me., are the house guests of Col. and Mrs. Dana T. Merrill.

The ladies of the Post met at the home of Mrs. L. D. Gasser to reorganize the afternoon bridge club and the card club for both the officers and ladies. Mrs. Dana T. Merrill will continue as president, and during the absence of Mrs. R. W. Bryan, Mrs. Gasser will act as the secretary and treasurer.

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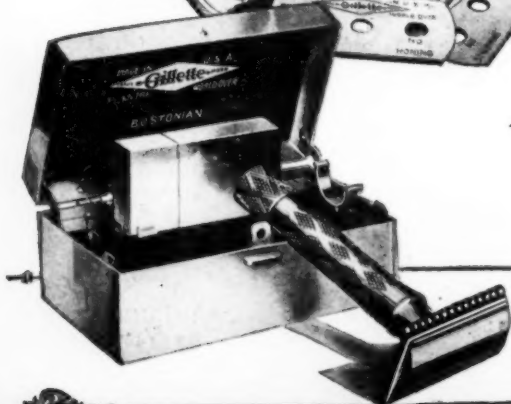
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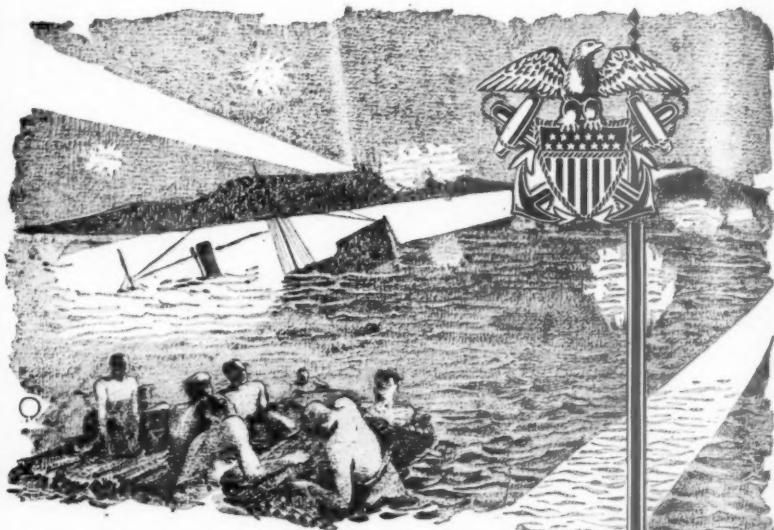
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ARMY AND NAVY JOURNAL

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SATURDAY, OCTOBER 17, 1925

ORVILLE WRIGHT FORECASTS AIRCRAFT EXPANSION

MONDAY, OCTOBER 12, 1925

STATEMENT OF MR. ORVILLE WRIGHT, DAYTON, OHIO

The Chairman: Mr. Wright, the President's Aircraft Board was appointed to study the facts and make recommendations to the President as to possible ways of improving aviation in the United States. We have asked you to appear before the Board because you, in a sense, are responsible for the whole problem. You and your brother taught men to fly. We have asked various distinguished men who have appeared before the Board to give us for our record their personal experiences. However well the witnesses may have been known, this course has seemed advisable in order that the readers of our record might know the capacity of the witnesses to speak with authority. It will not be necessary to ask for your record. The work of your brother and yourself is known wherever men fly. It will be known in the future as long as men fly.

We will be glad to have you give the Board any views you may have which you think will assist the Board in the problem before it.

Mr. Wright: Not being a student of naval or military affairs, I shall not presume to make any suggestions as to the use of aircraft in warfare. I offer only a few suggestions, and none of them new, along the lines of civil aviation, in which I believe the National Government can and should take part immediately.

There are many other ways in which the Government can eventually participate, but I do not venture to make suggestions far in the future.

The promotion of civil aviation will serve two purposes: It will contribute to the happiness and welfare of the people and at the same time will build up a reserve for our national defense. The large body of skilled pilots, of skilled mechanics, of experienced aeronautical engineers, as well as the factories experienced and equipped for rapid output, which will be in existence, can be turned quickly to military uses in the emergency of war. Government money spent in building up such a reserve for national defense will not be wasted should war never occur. The greatest present drawback to the use of aircraft for civil purposes, such as commerce, mail, travel, and sport, is the lack of suitable air ports and suitable emergency landing fields.

Several of the larger cities now have the benefit of landing fields and a few others are planning to build and maintain fields at the expense of the municipalities. But it will be necessary to provide intermediate fields, to make flying between the larger cities safe. The smaller cities cannot now afford to provide these intermediate fields. Money spent by the National Government in helping to provide these fields; in the equipping of the air ports properly; in marking and lighting the airways; in providing radio or other means of directing the course; and in furnishing meteorological reports to as many of the fields as is necessary; will be money well spent and will some day bring large returns.

The commercial use of aircraft brings out the need of regulations for the protection of the public. It is clear that this regulation should be uniform throughout the country and therefore should be by the National Government rather than by the States. I think this can be done best through one of the present governmental departments. The Department of Commerce is well suited to this. But some congressional legislation will be necessary to put the control of aerial transportation in that department.

I believe the examination and licensing of every pilot who engages in the transportation of passengers or merchandise, for pay, should be required. I also believe that proper precautions must be taken to insure the safe condition of the planes so used. If this is done by Government inspection the cost of such inspection should be at the expense of the public, which is being protected, so that it cannot work a hardship on the small manufacturer or operator. For, it seems, everything should be done to encourage these small manufacturers and operators. I do not believe that the licensing of pilots or the inspection of planes should be required of any excepting those dealing with the public. I think it essential that Government regulation should not go too far at first. Further regulation can be added as experience demonstrates its necessity. What we need now is the beginning.

The success of our air mail, operating in every kind of weather, twenty-four hours of the day, demonstrates the practicability and usefulness of the airplane in peaceful pursuits in the future. Government aid, such as is not given to maritime commerce, will greatly hasten that day.

The Chairman: Are there any questions of Mr. Wright?

Senator Bingham: Mr. Wright, what do you think of the statement that has been made that aeronautical engineering has become standardized?

Mr. Wright: I think it is changing every day.

The Chairman: Do you think that the state of aeronautics is such as to require very considerable experimentation still to go on?

Mr. Wright: Oh, yes, indeed. I think that will be required for years and years. There has been a very rapid advance in the last five years, since the war.

Senator Bingham: It has just been recommended to this committee that money be spent for the purchase of planes and for the training of pilots and that the engineering field, McCook Field, for the Army, and the Naval Aircraft Factory be closed down. Do you think that such a procedure would tend to better aeronautics?

Mr. Wright: I do not.

Senator Bingham: What do you think of the work being done by the engineering division of the Army?

Mr. Wright: I think it has been very good, all that could be expected.

Senator Bingham: You are satisfied that they have spent their money properly and made real advances?

Mr. Wright: I think so, as far as I have observed it.

Senator Bingham: What do you think of the value of racing and some of these other so-called stunts, such as flying across the Pacific and into the northern regions?

Mr. Wright: All attempts of that kind lead to the perfection of the machine. Each competitor does his best to improve the existing models. So that while some of them have no immediate use excepting in making a record, the development that has occurred in designing the machine, in producing such a machine, is used in civil aviation and, I suppose, in the branches of military aviation.

Senator Bingham: You feel, then, that it has been worth while to promote the national air races and similar things?

Mr. Wright: I believe heartily in them.

Senator Bingham: You spoke of the importance of the Government doing something for meteorology. How far do you think we ought to carry this?

Mr. Wright: I think that should be carried as it is found necessary. In flying cross-country the pilot is going out of one area possibly to another and storm area. He should have advice in advance as to what is ahead of him so that he can avoid the danger. I think at the present this could be provided for by having stations at some of the principal airports and furnishing charts to the intermediate stations, so that the pilot can pick up the information as he travels along.

The Chairman: Any further questions?

Mr. Coffin: One question, Mr. Wright: In the commercial tour which finished in Detroit on Sunday afternoon a week ago in a driving rainstorm after covering 2,000 miles, eighteen started, as I remember it, and seventeen finished; what do you think of that sort of contest?

Mr. Wright: I believe in that also; very useful.

Mr. Coffin: Only one other thing, Mr. Chairman. We are hearing and have for years heard of the Wright Brothers and their accomplishments, but we hear very little of Miss Catherine Wright, who, after all, is just as instrumental in developing the airplane as were the brothers. I think we ought to at least be introduced to her. She is in the room.

The Chairman: The Chairman apologizes to Mr. Wright for not recognizing the most valuable member of the family.

Mr. Wright: The apology is accepted.

The Chairman: Are there any further questions?

Mr. Durand: Mr. Wright, I want to ask a little question: What, in your view, may be looked for in the near future along the line of advances in weight-carrying-capacity and radius of operation?

Mr. Wright: That has been gradually extending for the last six or seven years. I see no reason why it should not go on for some time to come, at least, at the same rate that it has been progressing.

Mr. Durand: That is, you look for a continuous development?

Mr. Wright: Up to a limit. There will be an ultimate limit. There will be a limit, but I do not feel that we have nearly reached that.

Mr. Durand: You would not feel like attempting to specify that limit?

Mr. Wright: No, I have not made a calculation of that kind and therefore would not wish to express a definite figure.

The Chairman: Congressman Parker.

Representative Parker: Mr. Wright, you heard Mr. Madden's testimony. Now, if we should stop the Government experimentation and leave it all in the hands of the industry, do you suppose we would progress as fast as we would—I mean, having the Government specify what they want in the plane and leaving the experimentation in the hands of the industry; do you suppose we would progress as fast as we would under the present system?

Mr. Wright: I think we would progress faster under both systems. I do not believe in concentrating all of it in any—

Representative Parker: In the industry?

Mr. Wright: Yes. For instance, at McCook field.

Representative Parker: I wanted your opinion on that.

The Chairman: We are very much indebted to you, Mr. Wright.



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ORVILLE WRIGHT

"You are responsible for the whole problem."

—Chairman Morrow.

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MONDAY, OCTOBER 12, 1925

SPECIAL BOARD MAKING A STUDY OF THE BEST MEANS OF DEVELOPING AND APPLYING AIRCRAFT IN NATIONAL DEFENSE APPOINTED BY THE PRESIDENT

STATEMENT OF REPRESENTATIVE MARTIN B. MADDEN

The charge has been made here, and elsewhere, if reports coming to me may be relied upon, that military and naval aviation have been retarded because Congress has not voted adequate appropriations. I wish briefly to address myself to that charge, and to leave with you some ideas which I believe, if put into effect, would insure larger returns to the Army and the Navy in the way of aircraft from the appropriations placed at their disposal.

During the war vast sums were made available for aviation, such sums as I think will astonish this Board when they hear about them. The Army's appropriation totaled \$1,695,854,758, of which we later repealed \$490,515,060.14. For the Navy a total of \$281,516,119 was placed at the department's disposal, of which \$97,000,000 later was taken away. For the two services, therefore, between April 6, 1917, and November 11, 1918, the stupendous sum of \$1,977,370,877 had been made available exclusively for aviation. The consequence was that when the war ended, aircraft, engines, instruments, and accessories were on hand or on order in quantities ample for peace-time requirements in the way of training and drilling for a long time ahead.

In such circumstances there seemed but one logical course to pursue, namely, to provide for the maintenance of the material on hand, for the operation of planes, for constructing new types, and lastly, but of paramount importance, for experimental and development work. This is the course Congress pursued, and I feel that I speak the sentiment of an overwhelming majority when I say it has no apologies to offer.

Only last February our committee was told by the head of the Navy Air Service that it had largely a matter of experimentation since the war. Should we have provided for quantity production of experimental types of aircraft? Mr. Madden then read from General Patrick's testimony before the committee on December 2, 1924.

I shall leave a copy of this hearing with you, and also of the naval hearing, Admiral Moffett's hearing. You will find them rather illuminating in your study of the question, because our committee goes into this problem. We did not skim it over.

I have heard something of a charge of criminal negligence made against the Appropriation Committees in Congress, but this borders on criminal waste. I cannot call it anything less. Think of buying 262 pursuit planes that a pilot has difficulty in seeing out of. Congress certainly was not to blame for that. Somebody was to blame, however.

Now we know that the two services have various air bases and that their plans call for operating units of certain types composed of a given number of planes at each one of the bases, and I am ready to concede that enough planes and spares are not available fully to take care of these plans. Why? Simply because the plans (and I do not wish to be understood as subscribing to them because I have not had an opportunity to study them thoroughly,) were evolved well before the services were able to procure planes of types that they were at all certain would meet their requirements. They made their plans long before they had the machinery to work the plans on, and they never changed their plans to meet existing conditions. That, of course, is a thing that could not be thought of. They are still experimenting and we have been waiting until they knew what they wanted before allowing them to proceed with quantity production.

Whether that was wise or not we leave it to the judgment of the American people, if they can only understand the facts.

You have been told by men who should know that, with few exceptions, no real steps forward have been made. I cannot help but conclude that the technical development of this new art may not be safely left to the armed forces if we are to take our place among the countries of the world in the air. I can but conclude that millions of dollars appropriated by Congress during the past few years for this development program, has been squandered in a purposeless, meaningless, endless experimental orgy. Now, that is a pretty strong statement, but that is the way I feel about it. Surely, it is not too much to expect that the millions spent should have purchased more than is in evidence in tangible results.

Why, the demands of some of these bureau people who come before us would bankrupt any government in the world, to say nothing of ours. That applies more particularly to the prebudget period. These fellows are all wrapped up in their duties—and I admire them for that—but they do not concern themselves with the whole sum available to go around.

The Army and Navy people, my experience has been, are the least concerned of any as to where the money is coming from. They always see a war on the horizon and want to be ready at the drop of the hat to go after or meet the other fellow.

It is not long since, just prior to the Conference of the Limitation of Naval Armaments, when the question of appropriation for the Navy was up in Congress, we were told that the battle fleets of Japan were riding into our various harbors. But they have to have some other reason now, and it is that we do not keep the fleet up to the 5-5-3 standard. That is the new one. I do not condemn them for that, and I do not condemn them for being enthusiastic; in fact, I admire them for it, but I do condemn them when Congress has appropriated all that the country can afford, for trying to blame Congress when they find themselves in difficulty because they have not wisely applied the money placed at their disposal.

I recall that following the Armistice the Navy people advocated an enlisted strength of 350,000 men. They wanted to keep in commission virtually everything that would float. They said they could not function the Navy with less. Even after the Conference on the Limitation of Naval Armament they were pressing for an enlisted strength of 100,000 men. They had 96,000 men at that time. They assigned their men to every ship and the presumption was that they were assigning them to every ship needed and so the committee gave them every ship they said they needed, except 23 destroyers in half commission, which involved 1,150 men. We wanted our Navy to be the best in the world, but we put the figures, at the end of consideration of the question, on the adding machine, and we were astounded to find that those figures totaled 67,000 men, assigned to one kind of duty or another, including jail service, hospital service, reserve for transfer between shore and ship and between ship and shore, and there were 29,000 of them that were not assigned to any duty except to wear the uniform and sign the pay roll. We recommended 67,000 men. That is what anybody would do in his business, but we were not sustained.

We fixed the Navy at 86,000 men and there are no more men assigned to those ships now than there were then, so I assume that there are 19,000 men that are not assigned. We did not want to squander any of the taxpayers' money to please anybody.

They wanted to operate all the war-built destroyers, at the time that I am just referring to, and did operate them at an expense of \$76,000,000 during the fiscal year 1921, simply because the money was available. They would not decommission any of the destroyers; Congress had to decommission them; Congress had to force it. There are about 200 of them tied up at the docks now, not needed, unnecessary, because they were built for the war.

The Army was no different. They were urging appropriations for a force of 500,000 men, at the same time and a universal military training law, which alone was estimated to cost from \$663,000,000 to \$900,000,000 per annum.

Following the Armistice, Navy chiefs were advocating appropriations covering \$1,414,064,090.15. This was after the Armistice. The Secretary of the Navy himself cut this figure to \$975,903,621, and the appropriations finally footed, that is, after we got through with all the controversies about them, \$616,096,838.88. The Army estimates for that year called for \$1,185,721,000.

I merely cite these instances to show the lack of concern of our defense people as to the fellow who foots the bill, and to illustrate the extravagance of their ideas.

I maintain that the Air Services could not have proceeded faster than they have except in the procurement of greater quantities of experimental types of aircraft and types which it must have known when ordered were unsuitable, as, for example, the 262 Thomas Morse planes. For the five-year period commencing July 1, 1919, and ending June 30, 1924, expenditures on account of Army and Navy aviation, the Air Mail Service, and the National Advisory Committee for Aeronautics reached the total of \$433,383,287.21, or an average of \$86,676,657 per year.

These figures do not include, however, funds expended in the maintenance and operation of the naval aircraft carrier Langley or lighter-than-air craft tenders; these cost to maintain and operate during fiscal year 1924, \$1,712,865.50, or in the construction of the two new carriers now being built, which will cost with their aircraft complement \$48,000,000 apiece in round figures, and toward which \$85,000,000 has been appropriated. While these figures in themselves do not argue that the appropriations have been adequate, they are illuminating in connection with foreign air budgets, which, to some extent, at least, should be an indication of whether or not we have lagged, or whether we have not been recklessly careless in doing what ought to be done to promote aviation.

Figures prepared by General Patrick on foreign air budgets of last December, the latest available, were read by Mr. Madden, and also Budget figures for the U. S. Army and Navy. Tables showing the estimates and appropriations directly on account of aviation for the Army and Navy from 1923, when the Budget started, to date, were also shown the committee.

To summarize, I think it will be perfectly patent to anyone who will make a study of the question that had materially larger appropriations been made we would now find ourselves stocked up with a lot of antiquated aircraft of many different types, all now needing replacement.

It does not require Military or Naval Academy graduates to fly aeroplanes. Any lad possessing the requisite physical qualifications and a certain amount of daring, perhaps, in his makeup can be readily trained as a flyer. The Air Mail Service is operating without Military and Naval Academy graduates. The record speaks for itself. Why do we need an air corps, then? Why need we ponder over the commissioned personnel question? We can get all of our flyers, both for the Army and Navy, from the

ranks. We could continue to employ officers to command stations and air detachments and do observation work and do the navigating, where necessary, but they need not be air officers.

I would not advocate that enlisted flyers be required to serve in the lower grades. If a man in the service qualified, I think we should provide that he might be immediately rated a chief petty officer, or equivalent Army rating, and after a brief spell, rated as a warrant officer, and, in the case of a man enlisted for flying duty, that he should be enlisted in a petty officer rating and similarly treated if he should qualify, but discharged otherwise.

The Fleet Reserve would take care of the naval enlisted man, and we could make similar provision for the Army man. Or, after their flying days are over they could be continued on ground duty until they had had sufficient service for retirement. Another important consideration would be more than likely a goodly number of enlisted flyers would leave the services upon the expiration of their enlistments and would go out and engage in commercial aviation and still be available to the military forces in time of emergency.

Leaving out of question the method of organizing the fighting forces in the air, the question of value received for money spent will be a live question, no matter how these forces are organized and no matter under what name this work is carried on.

It may as well be understood one time as another that you can never run a successful air force composed entirely of commissioned officers. Each commissioned officer naturally looks forward to the time when he is going to be moved up a grade. If he does not move up he will not be satisfied. If he does move up, the time won't be long before you will have lieutenants commanding generals in the Air Service, and that, everybody will agree, is impractical. You can't run an Army with all generals, or all lieutenants, or all captains, or all colonels, or all admirals, any more than you can run a church with all bishops.

The expenses of the Government in all matters of military and naval aviation are now going on at the approximate rate of \$86,000,000 a year; it is \$86,964,000. Trying to determine just how much aviation of a military character might be indulged in for this expenditure, I suggest the following:

Fifteen hundred new airplanes of various designs, at \$20,000 each could be purchased annually, amounting in the aggregate to \$30,000,000. That is 1,500 new ones. Of course, you cannot buy 1,500 new planes at \$30,000,000 if it costs \$20,000 to design them, as it is now in some services, and \$10,000 for inspection. You cannot make it for \$30,000,000 under this situation, but I am telling you how you can make it.

Ten ground service men for each airplane, which is more than ample to properly care for the airplanes, at \$1,500 each per enlisted man, which I think would be a fair average to cover his Army pay, his clothing, subsistence, and so forth, would cost \$22,500,000. Now, I am making this suggestion as to what kind of organization you can get for the money.

One thousand five hundred officers, or one officer for each ten enlisted men, or one officer for each of the one thousand five hundred airplanes, would cost approximately \$7,500,000. I have allowed \$5,000 apiece.

If these airplanes are each flown 300 hours during a year, that would be an approximate total mileage flown of 45,000,000. This is many times the mileage of these past years and many times the mileage which will probably be thought necessary at any time. A liberal estimate of the cost of maintaining the airplanes and their power plants for this much flying could not exceed 50 cents per mile, the labor having been provided for in the enlisted man estimate above. This is a total of \$22,500,000 more.

Now, our total has reached \$87,000,000.

Five million would be a liberal estimate for the maintenance of all flying fields necessary as bases of operation for these 1,500 airplanes. Our total is now \$87,500,000, as against \$86,000,000, now being expended, for which we have received nothing.

To come within the above expenditure, certain of the fields now in use by the Army and Navy would have to be abandoned. It would seem that two sizeable fields on the West Coast, one or two in the Mississippi Valley, one or two on the South coast, and one or two on the East Coast, are all that would be necessary.

The flying activities of the Army and Navy would have to be confined to practice flying, as differentiating from joyriding, under conditions imitating those of warfare. The joyriding, cruising around the world, jumps across the Pacific, attempts to discover the North Pole, and so forth, serve no purpose and have no place in this training.

To accomplish the above, a procurement office in the hands of a civilian would have to be established, through which office both the Army and Navy, or the Air Service fighting forces, whatever they may be termed, will possess themselves of these airplanes. The failure of the Army and the Navy to spend their money intelligently in the Air Services is not new. Similar extravagant, get-no-where programs have been carried on from the beginning.

Fifteen hundred airplanes is probably more than this country has need of in peace time; perhaps 1,000 to 1,200 would do the work.

To succeed, this sort of activity should be made as free as possible from the restrictive and slowing-down activities of the General Staff of the Army and the Office of the Chief of Operations of the Navy. The General Staff and the Chief of Operations, while necessary for coordination of tactical maneuvers in warfare, are neither trained or qualified to direct the purchase of the necessary equipment, nor are they trained in the art of spending the public money economically.

I want it understood that I am not in favor of taking the command of the Air Services away from the Army or the Navy, any more than I am in favor of taking the Submarine Service or any other service away from them. Somebody has got to be responsible somewhere. You cannot send the Air Services adrift without management.

I think that there should be legislation definitely defining the fields of operation of the two services. A single air budget I am firmly against and I do not think the time is yet ripe to provide for all air expenditures under a single head for the two services.

Representative Parker: Do you not think it would be ensier, if your scheme were put into effect, to have a single budget for materiel; not personnel, but materiel?

Representative Madden: I do not think it would make a bit of difference. I would as soon have it one way as the other.

Senator Bingham: Mr. Madden, your scheme is like the French method, wherein a sub-secretary for public works purchases all materiel for the air; they tell him how much money they have to spend, and tell him what they want to buy.

Representative Madden: Yes; on a large scale. I think it is a prac-

tical solution of what seems now in the military channels to be an intricate and perplexing problem; it simplifies the problem.

Senator Bingham: Mr. Madden, Commander Rodgers, the hero of the Pacific flight, recommended a new Secretary in the President's Cabinet, to be known as a Secretary of National Defense, and under him three sub-secretaries, one for War, one for the Navy, and one for Supply, to do all the furnishing of the things needed. What do you think of that?

Representative Madden: I have always been in favor of a Department of National Defense. A department—not two departments—one. That would involve secretaries later to take charge of the various branches. I think Commander Rodgers' suggestion is a wise one. And we have, I believe, a bill pending in Congress now to make a Department of National Defense. Whether it is going to get anywhere I do not know.

My proposition is to do away with flying officers and substitute enlisted men would dispense with the necessity for increasing appointments to West Point and Annapolis in order to supply flying personnel. The enlisted man proposition, as I have pointed out, would settle the air corps question, would settle the pay and promotion question, would keep the retired list down, and would save the great expense of training boys at the two service schools. It costs to put a boy through West Point or Annapolis not less than \$10,000. I have heard a figure as high as \$18,000.

Numerous figures were given by Mr. Madden relative to personnel of Army and Navy, appropriations, planes on hand and required, plots, etc.

Mr. Coffin: Mr. Madden, how in the world are we ever going to get regulatory legislation for the aviation—

Representative Madden: The easiest way in the world, if you will let me tell you—

Mr. Coffin: If Congress goes on and pays no attention to it?

Representative Madden: But Congress will pay attention to it.

Mr. Coffin: They have been six or seven years putting off the passage of the bill.

Representative Madden: Putting off the passage of what bill?

Mr. Coffin: Well, any one of a half dozen. The Winslow Bill has been before Congress.

Representative Madden: For what?

Mr. Coffin: For regulation.

Representative Madden: Well, regulation. There has been nobody anxious for the passage of that bill up to this time as far as I can see, even the people interested in aviation, but there will be and Congress has been studying it. You are talking now about the question of regulating aviation in the air.

Mr. Coffin: We are practically the only civilized country in the world that is not doing it.

Representative Madden: That is a thing that has no importance in connection with the military question that is involved here, but it ought to be done as a matter of commercial safety.

STATEMENT OF CAPT. HOWARD G. RATH, LOS ANGELES, CALIF.

Senator Bingham: Captain Rath, will you please state your war record, the part you took in the war?

Captain Rath told how he joined the Aviation Service of the Army at Paris, France, as second lieutenant, his service with the 96th Squadron, the first squadron that the American Army had at the front, and of his duty with the 55th Squadron of the English Army, a long-distance bombing squadron. He received the D. S. C. for a bombing raid carried out over Champley during the St. Mihiel attack.

Senator Bingham: What do you think of the possible future of bombing, Captain Rath?

Captain Rath: Well, sir, under its proper limitations it will be a great auxiliary aid of the Army, but I would like to say right here that a certain operation that was carried on against a navy ship out at sea was carried out by tactics that we learned, the American aviation learned during the war, was absolutely impossible to carry out.

We learned that lesson at great expense of material and personnel. I say that for the reason that there were three squadrons operating there for the American Army in bombing during the St. Mihiel attack, my own squadron, the 96th, the 11th, and the 20th, and we had to, or were asked to, rather, carry out certain missions which are very similar to the one carried out in some of the details, and we came out of that attack, the 96th, with three officers left out of twenty that went out, and the 11th and 20th with from a fifty to sixty percent loss.

The reason being that we were asked to fly at low altitudes, which was against all of our training, and which permitted enemy aircraft to dive down on us, during weather in which it was impossible to fly in bombing formation and we could not see the objectives.

I claim that the lesson learned there demonstrated that there were certain limitations to bombing, and I am at a loss to understand why a certain high commanding Army officer, who was in high command of this bombing group during the war, and who, it seems to me, was in position to learn these lessons, did not benefit by it.

He is still in the Army, and practically all of the flyers in that group were civilians, they came in as civilians, and went out at the end of the war. It seems to me those lessons we learned should have been used to improve bombing; that having once found the limitations they should go on further, and not go back and attempt to do things that we attempted to do once and found disastrous. During the St. Mihiel attack, on account of the weather, the rain and the wind, and on account of the low ceiling, we were forced sometimes to fly 3,000 feet down, which was just about the same height that they reached in or was the highest height, that they reached in the bombing operation against the battleships. They carried on at from 250 feet to 3,000 feet, and every time we attempted that during the St. Mihiel attack it was either a failure or we met with disaster.

Senator Bingham: Who ordered those raids?

Captain Rath: The Chief of the Air Service, or his staff, of the 1st Army.

Senator Bingham: What is that?

Captain Rath: The orders came from the Chief of the Air Service of the 1st Army. Give us clear weather, and give us good visibility, and give us altitude and protection, and we can accomplish results within certain limitations.

Now, considerable has been said about the fact that if we gave all of our time to aviation only, we could do away with the Army and the Navy. That would be impossible. I want to say that nobody believes more in the future of aviation than I do, but I claim it has its limitations, like any other branch of the Army. One of its main limitations is bad weather.

For instance, to show you how much bad weather we ran into, in which no bombing was done, I might say that from June 19th to June 25th, seven days, not a propeller was turned on account of the bad weather.

The Chairman: What were those dates, Captain?

Captain Rath: June 19 to June 25, 1918. August 26th to August 29th, four days, no bombing. I have left out instances of one or two days, because that might happen at any time, but I am picking out such spaces of time which would give another fleet a chance to come over to the United States from England, for example. From August 5th to August 11th, seven days, no bombing. At St. Mihiel we were sent out regularly at that time, but, as I have said, the weather was impossible during most of the time, and on fourteen raids we carried out during the St. Mihiel attack, only three of them could be called successful in any way, and we had five disasters.

After the results growing out of the St. Mihiel attack, which was carried on over the protests of our squadron commanders and group commanders, the flyers got together and talked the matter over. It was a strange thing, but we were never asked to come up to headquarters and headquarters never sent down to us to see what the trouble was; we never had that coordination.

Senator Bingham: Captain Rath, did the British get any better results by bombing at low altitudes than we did?

Captain Rath: No, sir; and I do not know of their ever having bombed at low altitudes.

Senator Bingham: You stated, I believe, that the bombers usually flew at the extreme height of the ceiling?

Captain Rath: Yes, sir.

Senator Bingham: Was that in order to avoid antiaircraft?

Captain Rath: Yes, sir; to a certain extent at least, and also to avoid enemy aircraft.

Senator Bingham: You had so much experience with bombers at the front, Captain Rath. Did they have that supreme contempt for it which Colonel Mitchell has led us to believe bombing pilots have?

Captain Rath: No, sir; no, sir. As I stated this morning, we avoided as much as possible antiaircraft batteries. As soon as we discovered batteries we left them alone and went around them. Certain cities we were trying to bomb continuously, like the real center of the Briey iron center, was heavily protected by a barrage of antiaircraft.

I was very much impressed by Admiral Hughes' statement the other day about how the Navy had worked out the cone of fire, because that is the way to approach the situation. And the Germans—naturally, I do not know what they did, but they had some system worked out by which they had a group of batteries, and as soon as one of them could get our altitude, and I am not talking about 3,000 feet, but I am talking about from two and a half to three miles, and they could shoot way past that—

Senator Bingham (interposing): That is 13,000 to 14,000 feet?

Captain Rath: No; 14,000 to 15,000 feet, and the English flew from 18,000 to 20,000 feet, and they had just as much trouble as we did.

At a place where the Germans had a big battery, and I mean by that, some 40 or 50 guns, they would throw up a barrage there, and as soon as we would get going along there, as soon as they would get our altitude and direction, they would correct all of their other guns immediately. How they did it I do not know, but they did it. And that is the way to approach this situation, I think.

You cannot do anything with one gun, and I do not believe you can do anything with one gun to shoot at a sleeve. I do not know much about antiaircraft, but it seems to me you have got to have a battery, not shooting one at a time, but as soon as you have shot and got yours over or short, whatever it is, why, then you fire a volley of the whole battery. That is what the Germans seemed to do, and with great effect.

Senator Bingham: How many bombing pilots were lost the last three or four months of the war?

Captain Rath: That was when our biggest loss occurred—our biggest loss was at St. Mihiel.

Senator Bingham: Who was in command then?

Captain Rath: At that time the Chief of the Air Service was Colonel Mitchell.

Senator Bingham: Was he the man who required low bombing against your protest?

Captain Rath: Not against my protest, but against the squadron's protest, and against the group commanders' protest.

Senator Bingham (interposing): At what altitude did you fly in the Argonne?

Captain Rath: At our regular altitude, two and a half to three miles up. We also had pursuit protection.

Senator Bingham: Is it your idea that in another war that any bombing that would take place must be protected by three or four times as much pursuit?

Captain Rath: Yes, sir; practically that.

Senator Bingham: What weight did you carry?

Captain Rath: About 400 pounds. Some had 300 and others 400 pounds. Some engines could not carry that much. We had to reduce down to the weakest engine to keep them all in flight.

STATEMENT OF ADM. S. S. ROBISON, COMMANDER IN CHIEF, UNITED STATES FLEET

The Chairman: You are now the commander-in-chief of the United States fleet?

Admiral Robison: Yes, sir.

The Chairman: We would be very glad if you would tell us in your own way anything that you think would help the Board in the consideration of that general problem.

Admiral Robison: When I came to the fleet they had reached the stage where they felt confident enough of the success of the present catapults to place them on battleships as fast as it could be done. And on the battle fleet they have now on all but one battleship, and there may be one other, these catapults. And they have one battleship with two catapults.

It was contemplated to place three catapults on each battleship, but it was learned that in order to find a place for it without interfering with other things, was impracticable with ships as at present built. There is no flying off or on these ships. They get their planes off by catapulting them. They get them back on again by hoisting them aboard. Naval planes have not yet progressed to the stage where they can fly off one ship and light on a carrier, and vice versa.

Now, the catapult on the California was put on board immediately after I went there. And I have been within ten feet of it for two years,

and we teach people to fly from that catapult; teach them to handle planes by catapult. And we have progressed to the point where we can catapult planes by signals. They get them off anywhere from ten seconds to two or three minutes after the signal is up. And the theory is that these observation planes, the ones I am speaking of, are used for spotting a shot beyond the reach of the ship's spotter.

Now, we also carried during these last maneuvers, each ship carried one of the fighting planes, as we called it. In other words, in order to protect the observation plane, which is a slower plane and which has another object in view, these fighting planes are used.

Senator Bingham: Are they discharged from a catapult, too?

Admiral Robison: Yes, sir. One battleship normally carries about three planes. If there is only one catapult it takes some minutes, about ten minutes, to get the catapult in shape after she is fired.

We have been doing a great deal of work within the last year or two in attempting to ascertain what we can expect from antiaircraft guns. It is rather difficult to simulate war, because the plane that tows the sleeve that you fire at hampers somewhat the gun. It must not shoot the plane, and as the plane approaches, you have to wait until the towing plane gets at a safe angle before you open fire. So that by the time the antiaircraft operators' gun takes up the range of fire the opportunity is somewhat limited, somewhat more limited than it would be in actual action.

As commander-in-chief of the battle fleet I have all the combat arms under me, and I play one against the other; I am not conscious of any bias. The personnel in every branch, I feel, is keen and interested in its own class, and perhaps firmly convinced that it outclasses other branches, although they see the power of other branches; but we get the pro and con all the time.

Now, from the Langley you can catapult a plane on wheels on the land. We cannot yet catapult planes on pontoons, although we can catapult them from the Langley also. The largest or heaviest plane we have ever placed on the Langley is 7,000 pounds. She can get rid of any plane she can land, but she cannot land them all yet.

Now, it has been sometimes a moot question whether ships should carry bombers, or give up bombers and take fighting planes. You cannot take everything. You can help destroy the other fellow with your bombers, but the other man, if he has no bombers, or not enough of the number of fighting planes, say, four, which is as many probably as he can carry, he may destroy your bombers before you get into the air. That brings in the air fighting. Our idea is that we will probably always have more fighting planes at sea than any other kind of planes. That is subject to revision in the future.

The Navy, in order not to have too many types of planes, are getting up a three-service plane. She can carry a bomb or torpedo or gasoline, and is a good scouting plane of great endurance. You can calculate that when any plane that is in existence aboard a ship, she must be warned and kept turning over for catapulting until you want to use her. And although she may be a five-hour plane or a six-hour plane, you cannot consider more than four hours effective work on a plane. That brings great limitations on the man that is using her, because unless you make provisions to get that ship back she is gone and the personnel is gone.

The Chairman: Does that apply to the carrier, too?

Admiral Robison: Yes; absolutely.

The Chairman: Did you happen to read Admiral Shoemaker's testimony the other day, Admiral?

Admiral Robison: No; I have not read anybody's testimony, except in a general way.

The Chairman: He took the position that the planes discharged from these sea carriers, whether or not they could get back in time of peace, they never could get back to that carrier in the case of a sea fight.

Admiral Robison: They might not, you know.

The Chairman: Because the enemy's force would be directed so hard at the carrier.

Admiral Robison: That would depend, of course. The force might be gone. That brings up many other things. You are limited, in sending up planes, by the daylight and the number of hours before dark. I am talking about using planes. You progress more slowly on account of the weather you are subjected to. You have rain, and fog, and wind, and sleet, and of course, the things that affect them depend on these other things. If they get into all these things during the four hours, then their chance of getting back in four hours is not so good. I feel very clearly on this subject, because I have devoted a lot of my time to getting plane reports when they get out in the morning and home at night, because I use them all the time.

Now, my aviation aide advises me—he is an officer of seven years' experience—that aviators, and I feel the same myself, need only assurance, official assurance, in probably black and white, that when they are ordered to duty in aviation that nothing they do while they are on that duty then will prevent their advancement with their fellows. In other words, this promotion—we have a single list in the line for promotion, as you know—will have something to do with the duty they perform if they have been on other aviation duty than like on a man-of-war all the time, you understand. And I personally feel that their flight pay is not too great for the extra skill and extra risk which they undergo. But like everybody else in this world, when you get money every month you spend more than you do if you do not get it. So I feel that the Government should insure them until such time—now, the deaths per flying hour in every country in the world, although they have their ups and downs, are getting less. Now, we may approach a time when the risks of flying are no greater than any other risks, then the people who engage in that business will have the same pay as other people. But we have not reached that point yet, and I think that they should have both flight pay and insurance, and that their examination should be under that in accordance with the duty they have been performing.

Now, I have not heard any aviator in the fleet say that there was anything to prevent good planes from being designed. In fact, I think most of them think good planes are being designed. Nor was there anything to prevent the flyers from becoming expert, providing the weather and other conditions give them an opportunity to fly enough to retain their expertness. And there is nothing to prevent their formation of tactics, because that is what we engage in all the time, the formation of new tactics, which are most advantageous to us and most disadvantageous to the enemy. So along those lines I do not advocate any change whatever.

I have had other experience in the service, very largely in connection with procurement, and I find from my experience I say that the number of people who can really design in this world are very limited, and they are generally very thoroughly known to the people who are in the business.

Senator Bingham: Admiral, what do you think of Mr. Madden's suggestion of having a single procurement office for the Army and the Navy?

Admiral Robison: Well, I was with Winthrop, who was afterward Secretary of the Navy, and when they tried to buy his supplies through another department he said he did not see why the Treasury Department should buy his stores for him when he knew better what he wanted than they did. That is not as simple as it sounds, sir. Procurement according to specifications is a very difficult thing to achieve, as you probably all know if you have been in business.

Senator Bingham: It was testified this morning by a war pilot who had received the Distinguished Service Cross that he would want in another war four times as much pursuit as bombing, to permit the planes to carry out their functions.

Admiral Robison: Yes; I tried to make that clear that some people want more, even to the extent of leaving the bombing go. But I think a plane with the pontoons is not as fast as without them. And the pontoon is not a fighting plane.

Senator Bingham: What do you think of the necessity for pilots continuing on regular aviation duty, without being detailed to duty which takes them away from the planes?

Admiral Robison: I have devoted some little attention to that. I have tried to point out that while they are serving on board combatant ships they must do the other duties, so as to have the information that goes to naval officers generally. Since they are on board 90 per cent of the time, they have the same opportunity as anybody else, except for caring for the particular material they are going to use. Now, if they are called away from that, and the Government sends them on a duty which prevents them from keeping up, I think the law should recognize that. And you have a number of aviators coming in from civil life who have not this basic education, and they have more difficulty in getting it, and those men should not have their career cut short when they have come with a tacit understanding that they have entered a lifelong career as a naval officer. So I would like, as I said before, a little more flexibility in the hands of the Secretary of the Navy to allow them to go along with their studies and with their work, but to carry other duties, even though they are in aviation.

Representative Parker: Admiral, do you not think the more a man flies the better he can fly?

Admiral Robison: I could not answer that, sir. I have seen an aviator fly 18 hours in succession in the air.

Representative Parker: I do not mean the more he flies in one day, but I mean continuously, if he keeps up the practice.

Admiral Robison: That is a general statement. I think that is true.

Representative Parker: Even if that is true, you would be against the in-and-out system, would you not?

Admiral Robison: I do not know enough about it, sir. I have never heard about the in-and-out system until you mentioned it.

Representative Parker: I mean the principle of the in-and-out system.

Admiral Robison: What is it, sir?

Representative Parker: About detailing a man that is an aviator and a good one.

Admiral Robison: Yes.

Representative Parker: That has the touch and all that, detailing him away from aviation would probably detract from his ability as an aviator, would it not, if he should leave it for two years?

Admiral Robison: Probably. But I would rather ask an aviator. He knows how he feels better than I know. I have been in the air, of course, but I am not an aviator.

Representative Vinson: Admiral, what is your view in reference to the special corps for aviation?

Admiral Robison: I never gave that very much stock, sir, until I heard about this investigation.

Representative Vinson: How would it operate in the fleet, a special corps?

Admiral Robison: I think I told you, Mr. Vinson, that a man is bound to be 97 per cent of his time on board the ship and not in the air, and caring for his materiel does not take all of that 97 per cent, and if he had nothing else to do he would not be very well occupied.

Representative Vinson: Now, what effect on the morale would there be if you had a special promotion list for the aviators with the fleet?

Admiral Robison: I do not think that would work, sir.

The Chairman: Admiral, what percentage of the men in the Navy fleet when it was under your command could fly?

Admiral Robison: I could not say that, sir. It is a very small percentage. I think I have here the number of our officer aviators. I think 94 pilots we had just a few days ago. They vary from time to time. Those are all aviators.

The Chairman: Those men require a specialized training?

Admiral Robison: Yes.

The Chairman: What kind of a change in the law have you in mind relative to naval aviators?

Admiral Robison: I think the laws regarding the promotion of naval aviators and Army aviators also are in the Revised Statutes, and neither the Secretary of War nor the Secretary of the Navy can deviate from them to any great extent.

Representative Vinson: But it should go farther than mere law, should it not; it should be extended to the selection board?

Admiral Robison: It goes to the regulations. The selection board, if that is retained in the law, should be subject to the instructions along those lines in the regulation. You see, the regulations of the Navy have the force of law, because they are approved by the President.

Rear Admiral Fletcher: If Congress passed a law then providing that officers should not be discriminated against in their promotion to the next higher grade on account of having performed aviation duties, would that cover the ground?

Admiral Robison: Any other duty, sir.

Rear Admiral Fletcher: What?

Admiral Robison: Make it general, any other duty.

Rear Admiral Fletcher: Any special duty?

Admiral Robison: Any special duty. It is very difficult to word one of those laws, sir, as you may have found out. That is the general idea.

The Chairman: It is not so much a question of law alone; it is a question of fitness to command a fleet.

Admiral Robison: Yes.

The Chairman: Now you want just as good aviators, of course, as you can get?

Admiral Robison: Yes.

The Chairman: And as skillful fighters as you can get in the air?

Admiral Robison: Yes.

The Chairman: And you want them to take as much training and devote as much time to that as is necessary to make them of the greatest use in the air to the fleet?

Admiral Robison: Yes.

The Chairman: It is something of a question of fact as to whether or not that amount of specialization in the air is or is not consistent with general fleet training that fits a man for high command.

Admiral Robison: Well, during the time of a man's life when he is under forty, since he is forced into other duties in connection with his aviation, it does not affect him one way or the other, because many of us follow other specialties, you know.

The Chairman: Are these other specialties as absorbing to a man's time, the other specialties you speak of, as is aviation?

Admiral Robison: Yes; ordnance is in very many cases, and if you do any design work at all it is totally on the side. Aviation, you see, in the Navy is very closely connected with the other executive parts of the Navy and is not as separating.

The Chairman: It is contemplated that a substantial portion of your aviation force will operate from shore base.

Admiral Robison: Naval aviation?

The Chairman: So it has been testified to.

Admiral Robison: We have had to operate so far—we will always have to operate some, no doubt, but we hope to have it aboard ship.

The Chairman: All of them?

Admiral Robison: I would not say all, because as soon as we seize an advance base, for instance, we would probably put some of them ashore to defend the base, but if we wanted to have an overseas expedition the aviation that we left behind in the United States would be no good to us.

The Chairman: How about coast defense?

Admiral Robison: I believe that is all settled for the Army between the Army and the Navy. We expect to attack the enemy coast, Mr. Morrow, rather than to have to defend our own. My thoughts run along those lines more.

The Chairman: Do you agree with the opinion that has been expressed by some of the high officers in the Army that all of the aviation that operates from a land base should be under the Army?

Admiral Robison: I generally probably do not, although I have never given the subject a great deal of consideration. We have an agreement now, sir, that the demarcation between the Army and Navy for general purposes, although they overlap very frequently, is the shore line.

The Chairman: We have also had testimony that the aviation that operates from the land base if within 200 miles of the shore is much more effective than any aviation that you can expect to launch either from catapults or from any sea carriers.

Admiral Robison: It will require a great deal of experiment to determine that, sir, whether that is true or not.

The Chairman: Do you feel that some special regulations or some special law should be passed that should protect the man who has qualified to do aviation work?

Admiral Robison: I do.

The Chairman: And who devotes a large portion of his youth to perfecting himself in that work?

Admiral Robison: If his duty has been such as to deprive him of other means of qualifying himself.

The Chairman: And that some sort of special examination might be provided for him that would take into account the fact that he had had to neglect some other type of fleet work in order to devote this large amount of time to aviation work?

Admiral Robison: I think that is my idea, yes, sir.

The Chairman: Would you have a separate list for them of promotion? I think you said you would not.

Admiral Robison: No.

Judge Denison: Is there any important reason, Admiral, why a naval aviator, as things go now, with qualified education, might not perhaps move up to command of a carrier, aircraft carrier?

Admiral Robison: None whatever.

Judge Denison: Would it or would it not be specially appropriate that the commander of a carrier should be an aviator?

Admiral Robison: No, sir; no connection between the two at all.

The Chairman: Do you know of any other government that has advanced as far as our Government has in naval aviation work?

Admiral Robison: I have not the means of comparison. I think you would have to get that from our intelligence service.

Rear Admiral Fletcher: Admiral, are you conducting any experiments in the fleet to develop defense against bombing attacks?

Admiral Robison: We have been conducting experiments for several years along those lines. I think most gunners now feel fairly confident in getting some hits in antiaircraft practice.

Rear Admiral Fletcher: You feel now, at this time and stage of development, that your defense is fairly effective against bombing attacks?

Admiral Robison: I think it is more effective than it appears as the results of our practices.

Rear Admiral Fletcher: Would you regard your defense today as effective under war conditions?

Admiral Robison: I would not say completely, because we have not had enough bombing attacks to quite find out, Admiral.

Rear Admiral Fletcher: You are developing it?

Admiral Robison: Of course we realize that bombers do not make as many hits in actual war as they do in peace, either.

Representative Parker: As a practical proposition, how high up do you suppose you could keep a bombing plane with your antiaircraft?

Admiral Robison: These three-inch antiaircraft guns of ours now six or eight thousand feet probably, but we will have some five-inch that will keep them up twelve or fifteen thousand.

Representative Parker: Suppose you can keep them up 8,000 feet. You have conducted bombing tests at 8,000 feet. What percentage—

Admiral Robison: I think that is on file with you, sir. I think Admiral Hughes gave it to you.

The Chairman: What type of bomb sight are you using?

Admiral Robison: I do not know, sir. I want you to understand that our bombing so far is not conducted in my immediate presence on account of the fact that we have not got the equipment to do it with. It is conducted so far from the shore base in the sense that the ships are away

from their base, and we have not got the airplane carrier that can carry bombers, and no ship can carry bombers, except very small bombs.

Representative Parker: From your experimental work today how would it vary between stationary and moving targets?

Admiral Robison: That has not been developed accurately, sir.

Representative Parker: What would be your estimate?

Admiral Robison: It is quite a difficult thing to state. You see, the tow line has to be very long in order to keep the target away from the towing ship.

STATEMENT OF LT. COMDR. BRUCE GARDINER LEIGHTON, UNITED STATES NAVY

Senator Bingham: How many hours have you had in the air?

Lieutenant Commander Leighton: Approximately 1,600, sir.

Representative Parker: You heard the Admiral say in answer to my question that a man from the list, his ability to fly after being detailed away from aviation would be—he said you better ask a flyer.

Lieutenant Commander Leighton: Yes, sir.

Representative Parker: What is your judgment about it?

Lieutenant Commander Leighton: I believe if you are away from aviation for two years that at the time you come back you are probably as a flyer not so competent as you were when you left. I do not believe that there is any legislation that you can make or any rules that you can pass saying so many years as a flyer and so many years as a nonflyer that is going to have any very useful effect.

Senator Bingham: As a specialist in aircraft motors, is there any other country that has any better engines than we have today?

Lieutenant Commander Leighton: On the whole I should say not. In the matter of the larger types of air-cooled engines I think, perhaps, we are a little behind what England has. That is, in the larger type of air-cooled engines. That is being corrected rapidly, however, by designs which are now out of the experimental stage and which are taking their place in the service and which are potentially the equal of anything there is in the world, so far as I know.

Senator Bingham: It has been stated that the duties of the naval aviators during the war, our naval aviators, did not take part in the major tactics with the fighting planes, because they were not located in that part of the fighting area where the big fights between pursuit, combat or fighting planes took place. Is that a fair statement?

Lieutenant Commander Leighton: I think that is true. We have not taken part in larger tactics. Of course the reason for that is, as Admiral Robison explained, we haven't got the materials, we haven't built the materials, have not been able to do so, to get the planes out into these areas where they are going to be of use. The development has been, I believe, as rapid as it can be, or as it could have been, in the hands of fallible human beings.

Senator Bingham: Then you feel that after the large carriers are completed and you will have an opportunity to have a lot of fighting planes on board ship that are not restricted in their maneuverability by pontoons, that the development of air tactics in the Navy will make much more rapid progress in the future than it has in the past?

Lieutenant Commander Leighton: Unquestionably so.

Mr. Coffin: I would like to ask you whether it has been your experience that the progress of development of designing has taken place within the Service or within the civil industry?

Lieutenant Commander Leighton: It has taken place within the services, I believe, almost entirely; that is, within the Services or with the agencies in the country who are developing with money which is obtained from contracts obtained from the Services for military aircraft and, of course, under the general direction of the Services.

Mr. Coffin: Take matters like motors, for instance the Packard motor.

Lieutenant Commander Leighton: That was developed under a contract. The history of the Packard motor, if the detail is given, is a typical example.

The Chairman: Have you formed any views as to the desirability of a separate corps?

Lieutenant Commander Leighton: I do not see why a separate corps is going to be of any use to us at all in naval aviation activities, for the reason that aviation in the Navy is something which is a little bit of everything.

The Chairman: You feel that you could get as effective aviation help for the fleet through aviators who are detailed from that line of work for a certain period, and then come back into general fleet work?

Lieutenant Commander Leighton: With reservations, yes.

Senator Bingham: What reasons did higher officers give you for not continuing in aviation?

Lieutenant Commander Leighton: It is a feeling on the part of certain officers—and they are individualities—that no officer should stay in any duty for more than a very short time, more than one tour of fleet duty or one tour of shore duty, I believe. It is akin to that general feeling.

Rear Admiral Fletcher: When an officer comes back into the work of performing the line duty, doesn't he generally have the facilities to keep up his flying so that he won't become inefficient?

Lieutenant Commander Leighton: It depends somewhat on the interest, sir. I think the facilities are there if he does desire to keep up his aviation duties, but I am not certain that he will keep them up during that time, because a man when he gets into a job to be successful in it must be an enthusiast in that job, and he can not spare the time.

The Chairman: Do you think there should be some kind of a separate promotion list?

Lieutenant Commander Leighton: No, sir.

Representative Vinson: Do you think there should be a temporary promotion list?

Lieutenant Commander Leighton: No, sir.

Representative Parker: As a matter of interest, was any submarine ever gotten by an airship during the war?

Lieutenant Commander Leighton: I think three, on the seacoast of England.

Representative Parker: The real reason for the question was to ascertain what you thought of the accuracy of bombing, the practical use of bombing and the accuracy of it.

Lieutenant Commander Leighton: The submarine is diving; the best you can do is to go after him the best you know how, drop your bomb and hope that you will be able to hit him. It is not a question of having any sights. The target is not there. All you see are a few bubbles. He sees you just as soon as you see him.

Mr. Durand: Suppose the younger officers were assured of an adequate future in accordance with their ambition, and in particular that they would be relieved from this discrimination in connection with the promotion; in your opinion with that arrangement, would that answer the so-called personnel problem now present in the Navy?

Lieutenant Commander Leighton: I think it would go a long way towards it. There are still some things, there are a great many things which must be done through the machinery that already exists in the Navy Department to clear up the personnel situation. The personnel situation is, of course, acute at the present time.

Mr. Durand: What are some of the other things, the most important of the other things that should be done?

Lieutenant Commander Leighton: The question of where the personnel is coming from, the question of training at the Naval Academy. We ought to have more junior officers in the flying service than we have at present. We have been restricted in numbers largely because we have, until comparatively recently, required that officers should serve three years at sea before going into aviation duties, and in that way we do not get the junior officers. We do need more junior pilots in the flying service, a great many more.

Representative Vinson: What about the enlisted personnel, the enlisted pilots?

Lieutenant Commander Leighton: I think the enlisted pilots have a very definite use and are of very great value.

Senator Bingham: How many naval aviators have you talked with about the present unrest in the Navy?

Lieutenant Commander Leighton: I have not come into contact with very large numbers in the past year or so, because I have been on sea duty with ships. I have talked with a number of pilots at other times, but not more than 30 or 40, and not very extensively at that. I think that there are a great many of the pilots who feel that there is something wrong with the system. I also feel that a large number of those pilots really do not understand what the system is.

Senator Bingham: The Secretary of the Navy has told us that many naval aviators desire a separate Air Corps analogous to the Marine Corps. Among those with whom you have talked, would you say that that was a correct statement of their feeling?

Lieutenant Commander Leighton: I would guess probably not. I found this condition as regards operation.

Senator Bingham: How many of the naval aviators with whom you have talked are in favor of Colonel Mitchell's plan of a united Air Service?

Lieutenant Commander Leighton: I doubt if any naval officers or other officers in the Service at the present time are in favor of Colonel Mitchell's plan of a separate service. I would not say there were none; I would say there are only a very few isolated cases.

Senator Bingham: What has caused them to change their minds?

Lieutenant Commander Leighton: I think we have gone on and gotten into aviation at sea; I think that we have found that there is a real use for aviation at sea. As we have learned its true use in naval activities, they have just come to a change of heart and their view is entirely different. They see aviation today in its relation to naval activities—that is, naval aviation in relation to naval activities—and understand what it is.

Senator Bingham: Have you heard any naval pilots express any hesitancy about appearing in public, before this or any other board, and expressing themselves as being in favor of placing the Naval Air Service on a different basis, for training, or on a different status from other personnel in the fleet?

Lieutenant Commander Leighton: Oh, no, sir.

Senator Bingham: We were told the other day by a captain in Marine aviation that 90 percent were in favor of a united air service but were afraid to say so.

Lieutenant Commander Leighton: Perhaps so; but if so I have not heard it.

The Chairman: We had an Army officer before the board the other day who, when asked the question by one member of the board as to whether he still considered himself an Army officer, or considered himself an air officer, had considerable hesitancy before he was able to answer. Do you think there is any feeling of that kind in the Navy?

Lieutenant Commander Leighton: No, sir; I do not think so. If there is I have not heard it expressed.

Senator Bingham: You do not think there is any serious unrest among those engaged in naval aviation duty?

Lieutenant Commander Leighton: No, sir. There is a certain amount of dissatisfaction, and we are always dissatisfied when we are seemingly interested in seeing things go on and yet we have not got as far as we would like to get, or as far as we think we ought to have gotten.

Mr. Coffin: Commander Leighton, in your experience, is there any fundamental reason why a naval aviator should not continue in line and yet cover his duties in connection with naval aviation, and also keep up with his line duties so that his line promotion will be all right?

Lieutenant Commander Leighton: No, sir.

Mr. Coffin: You seem to have done it, and Commander Rodgers, who has been before us, seems to have done it.

Lieutenant Commander Leighton: I think not. And because aviation is line duty. There is not any activity in connection with aviation, there is no work in the line of aviation duty at sea that does not have something to do with it. It is line duty as much as anything else. The only thing that is as respects aviation and line duty, aviation is more generally a line duty than any other service that we have, such as submarine duty or destroyer duty.

Mr. Coffin: Than any other specialty, you mean?

Lieutenant Commander Leighton: Than any other specialty; yes, sir. It is as wide in its scope and observation and research as the Navy itself.

STATEMENT OF MAJ. GEN. F. W. COE, CHIEF OF COAST ARTILLERY, U.S.A.

Senator Bingham: Have you prepared any statement for the board?

Major General Coe: I have no prepared statement on any general subject. But I have some notes on particular subjects.

There are only a very few places in the United States Army where the Air Service comes into personal contact, or, I mean, where they live with the rest of the Army. And I think possibly that is one real cause and factor of the present unrest. Of course there are other factors. For instance, the air man performs his duties alone, without immediate supervision. There are special dangers connected with flying, and they appeal to the public, and the air man undoubtedly feels that he is not being prop-

erly recompensed by the pay he gets in the Army. And I sympathize with him in that view rather than criticize him.

But I do feel that if there were some way, although I do not see how it could be attained, but if there were some way in which the Air Service of the Army could be thoroughly mixed with the rest of the Army a great deal of our difficulties would be solved. But, as I have said, I do not see how it can be done, because it would involve a tremendous appropriation to put flying fields and garrisons for other troops at the same point in order to bring them into more intimate contact.

As regards the effect of development of air force on coast defense, I repeat, as to any effect of the development of the Air Force on coast defense:

(a) There has been no effect upon the problem, which remains unchanged. The necessity for preventing an enemy from seizing bases of invasion, and for protecting vital utilities from damage by raid or bombardment is as great as ever.

(b) But the Air Force in its development has complicated the problem. There is no doubt, as the Chief of the Air Service says, that the strengthening of coast defense by the ability of airplanes to bomb enemy vessels beyond the range of sea coast guns is very true; also the extended reconnaissance by airplanes is exceedingly valuable; furthermore aircraft observation of fire at long ranges when practicable is a distinct advantage. And also control of observation fire on long ranges is absolutely necessary, not only for the Navy but for the coast defense guns. But I do not think there has been any change in the importance of the defense of certain important points by fixed armaments. The fixed batteries, the fixed 16-inch battery remains the most economical means and the only absolutely certain means of denying possession of certain waters to hostile vessels.

I feel sure that a naval commander would never bring his main forces under the guns of a 16-inch battery willingly, or consciously I should say, unless there were some very vital and important objects to be attained. I also feel that he will not bring his main force within range of a bombing squadron unless there was some very vital object to be attained.

Now, the range of the 16-inch gun is, roughly speaking 25 miles, and that of the bombing squadron is 300 miles. We have established an extended zone rather than anything else by the development of the Air Force. But an air force may not always be present. There may be conditions under which it cannot operate. But there are never conditions under which the 16-inch guns cannot operate, although there may be conditions under which it cannot operate effectively. That is under such conditions the commander of the fleet cannot operate effectively.

Now, there is another point: The enemy may succeed in getting control of the air. He may succeed in maintaining local control of the air even as against the coast line of an important nation although he has not general control of the air. That again complicates the difficulties of coast defense.

It should be understood, in the first place, that anti-aircraft gunfire, that is, the 3-inch gun or the larger gun, is to be directed solely against a bombing plane. It is not considered to be a suitable weapon for attacking a pursuit plane, or even an observation plane although it may interfere very much with the mission of the latter plane. But its first and primary target is the bombing plane. And once the bombing plane comes within its range it will be very difficult if not absolutely impossible for that bombing plane to get away from a reasonable and suitable number of 3-inch anti-aircraft guns.

The Chairman: The particular point about a gun or any other definite place is that you could estimate the probable position of the bombing plane in order to strike that point.

Major General Coe: Yes, sir. It is quite impossible to protect a city such as New York or any other large area by anti-aircraft gunfire. It is also impossible even for a superior and effective Air Service to give absolute protection to such an area. But the first and primary and necessary requisite is to furnish the best protection possible, and to do that is the Air Force. That must be provided.

For a small and definitely fixed target we feel confident that we can repel an attack from the air successfully with a reasonable number of guns.

Aircraft can perform valuable services in bombing—their radius of action is very extended—but the number of bombs carried is limited, the problem of adjustment on targets of limited extent is very difficult, and there can never be certainty that the planes will reach the objective.

For accurate, assured and sustained fire masses of artillery are still demanded—there is no minimizing of the artillery arm. Actual occupation and control of vital areas is necessary to victory, or the certainty that such occupation is imminent.

Aircraft can bomb, in a desultory manner, but air forces cannot occupy or control. The Infantry remains as important to final victory as ever. It is plain that the work of these three arms has been both aided, and if the enemy has air superiority made more difficult by the developments in the air.

In other words I will repeat again that the Air Force has not put any arm out of commission, but has simply become another force which must be considered and which should be coordinated I think in all operations.

As to a separate air department: As warfare becomes more complicated the necessity for and the difficulty of unified control increase. The commander who can best coordinate the operations of all his arms will win. With the new problems due to the development of air forces the necessity for a general staff to aid the commander is greater than ever before.

The idea that the air forces should operate under their own plans is untenable. They will have missions to execute alone, just as will the Cavalry, and just as has the Coast Artillery. The Coast Artillery may be given a mission to execute alone, of destroying any naval vessel that comes within the radius of its guns. But even so that mission must be executed under the direction of the supreme commander of the forces that are operating in that vicinity.

Now, the thought arises as to the desirability or necessity of a separate administration of the Army and the Navy. They should be separately administered. Separate administration undoubtedly tends to better technical development. But the reason why they should be separately administered is that they operate independently, necessarily, probably 99 percent of the time. And when they do come together there has been frequent occasion for trouble or misunderstanding in the past.

On the contrary, the Air Force operates 100 percent of the time either with the Army or the Navy. It cannot separate itself from both. It may separate itself from one or the other, but never from both. It cannot subsist in the air. It must always return to the surface of the sea or the ground for replenishment of its supplies, and therefore a force which oper-

ates 100 percent of the time with one or other branches certainly means that for cooperation it may best be secured by a single command.

The Chairman: You would give Army aviation some right at sea, and naval aviation a little bit of right to have a base on the land?

Major General Coe: Yes, sir. I would let Army aviation go to sea as far as it wants to, as well.

The Chairman: And keep the Coast Artillery under the control of the Army?

Major General Coe: Yes, sir.

Senator Bingham: It was testified here today that the most of the bombing done over the front area was from 14,000 to 15,000 feet.

Major General Coe: Yes, sir. I think if they are under anti-aircraft fire they will get up as far as they can. But the pamphlet used at Langley Field required usually bombing heights as between 8,000 feet and 5,000 feet. I take it from their own doctrine. But if I were under anti-aircraft fire I would get up as high as I could.

Including all batteries of anti-aircraft artillery which served in the American areas from July 17, 1918, to November 11, 1918, the average number of shots per plane brought down was 1,050.

I attribute that to this fact: When we went over to France we took their anti-aircraft material and followed it exactly as the French theoretical instructors told us to do. But the French in the field had gotten a sort of disbelief in their own methods of anti-aircraft fire control, and they did not themselves follow them. They shot as they pleased. We followed them rigidly, and our results were very marked—instead of 4,000 shots for each plane brought down, we got a plane for 1,050 shots. In fact, we got considerably better than that if we take only the batteries that fired at planes and brought them down. They brought down 17 planes from July 17, 1918, to November 11, 1918, and fired 10,273 shots, or an average of 605 shots per plane brought down.

The 30-caliber machine guns brought down 41 planes during a similar period, with an average of 5,500 shots per plane. Of course the reason the machine guns brought down more planes is very largely due to the fact that they were firing at a different class of planes, or planes on a different mission. They were firing at attack planes which were making closer trips, while these others were firing at observation planes at very long range.

Senator Bingham: In figuring the percentage of hits, at Fort Tilden, your 4.67, you did not use the number of holes made in the target?

Major General Coe: No, sir.

Senator Bingham: Or the number of targets which were hit?

Major General Coe: No, sir; we used the number of shells which burst in the danger space as it was laid down at the beginning of the tests.

Rear Admiral Fletcher: Is there any information which shows what percentage of the targets were hit?

Major General Coe: No, sir; there is not, Admiral. But it was very nearly 100 percent; that is, we very seldom brought down a target without some shrapnel holes. And we shot away three-inch targets in the air and lost them.

Rear Admiral Fletcher: And the probability is then that you hit 90 percent of the targets, or somewhere near—

Major General Coe (interposing): Well, Admiral, we fired a great many rounds. We fired in these tests probably 400 or 500 rounds. You would certainly expect holes in the target.

The Chairman: Are you speaking of the sleeve?

Major General Coe: I am speaking of the sleeve, yes.

The Chairman: Or this hypothetical solid within which it would destroy a plane?

Major General Coe: Yes; not necessarily destroy it, but we would expect a hit.

The Chairman: Now, is not the Admiral's question how many times you hit within that?

Rear Admiral Fletcher: How many planes out of 100 would you bring down?

Major General Coe: We would expect, from our experiments, to get an effective hit on a plane for nearly 5 percent of the shots fired would make an effective hit.

Rear Admiral Fletcher: Yes; but I am trying to get at what percentage of planes you would bring down. How many planes out of a hundred which attacked you would you bring down?

Major General Coe: Well, that would depend on the volume of the fire entirely.

Rear Admiral Fletcher: In your experiments, you did not determine that?

Major General Coe: No, sir; but we estimated that with a mobile battery that four guns will provide effective defense against an attacking squadron; that we will be able to put in a sufficient number of hits and hit the leading plane a sufficient number of times—or hit one after the other of the leading planes a sufficient number of times to break up the formation, and break up its effectiveness.

Rear Admiral Fletcher: That is what I am getting at.

Major General Coe: However, in the case of a vital point we would not trust one or two, but would put in enough batteries to be certain that the defense was effective.

Rear Admiral Fletcher: An effective defense means that you are going to disable at least 20 percent of the attacking forces? Do you regard that as an effective defense?

Rear Admiral Fletcher: Well, where they lose such a large percentage of the attacking force that it keeps them off.

Major General Coe: Well, then it is effective; but you will always find men who are willing to take chances.

Senator Bingham: General, you said that 3-inch guns were effective at about 8,000 feet.

Major General Coe: It is more than that, Senator. The maximum range of the 3-inch gun goes up to 37,000 feet. I think the fuse limitation is 25,000 feet.

Representative Parker: General, is that not the reason—the captain that testified this morning said they dropped bombs practically 25,000 feet on the western front?

Major General Coe: I do not see how they got up there.

Representative Parker: You have made improvements, of course, in the anti-aircraft guns since the war?

Major General Coe: Yes; we have made some improvements, although this material that we used in these tests at Fort Tilden was the same gun that was used in the war. We have a better carriage and a better fuse.

and a great many improvements which are under way at this time, some of which are ready for use, but we did not have them ready when we were making these tests, and the tests were made really with war material that was left.

The Chairman: Do you agree with Admiral Hughes, who stated to us that the antiaircraft gun has increased its efficiency more rapidly than aviation?

Major General Coe: Mr. Chairman, I think its rate of increase in efficiency is faster. I do not know how to compare two things like that.

I should have said, Mr. Parker, that the important improvement which we did make this summer was the fuse. Instead of a fuse area of 150 yards, the fuse area was cut down to 50 yards, and that is why we got 5 percent of hits, and that is a record no artillery has ever made before. Of course, there are all kinds of hits. A hit on a battleship is a hit. And a machine-gun bullet hitting on an airplane is a machine-gun bullet going through it. Now, the antiaircraft fire does not mean that kind of a hit, always. It has a shotgun effect. That is the difficulty in a towed sleeve. One of the things that caused us difficulty was that we could not see the sleeve. We could see the airplane three times as far as we could see the sleeve. You could see these sometimes, and this airplane was going through this mass of shrapnel.

Mr. Durand: To answer Admiral Fletcher's question a little differently, would you say that twenty odd shots could account for a plane?

Major General Coe: Well, that is hard to say, Dr. Durand.

Mr. Coffin: At what average speed were the targets towed?

Major General Coe: The average speed was 60 miles an hour. They were towed as fast as a Martin bomber could tow them. The speed of a Martin bomber—if they had the wind behind them, there were some undoubtedly 80 miles an hour, and others slowed down to 50.

Senator Bingham: Did the gunners know the speed at which they were to be towed?

Major General Coe: No, sir; they did not know it, except as they determined it by their instruments.

Senator Bingham: They did not know it beforehand?

Major General Coe: No, sir; and they did not have any information except as they determined it by their own instruments.

Senator Bingham: General, from your present position as Chief of the Coast Artillery, if you had a 16-inch gun battery to defend would you be satisfied if there were ten 3-inch antiaircraft guns in that immediate vicinity whose sole duty was to put up a barrage at a point where the bombing squadron was coming that was bent on destroying your battery?

Major General Coe: Well, Senator, a bombing squadron never destroyed a battery. It might damage certain elements of it.

Senator Bingham: Not destroy it, but it would make it ineffective? It could make it ineffective, could it not?

Major General Coe: It would be almost impossible, because a 16-inch battery is dispersed over an irregular area that is perhaps—depending upon other conditions—two miles and a half—two miles to three miles long and a half mile to a mile in width.

Senator Bingham: Let us take a 16-inch gun. That could be put out of commission by a salvo from a bombing squadron?

Major General Coe: It could be, but they would have to hit very direct.

Representative Vinson: They would have to do considerable fighting before they got there?

Major General Coe: I suppose they would. But we are speaking of an Artillery attack, I suppose?

Senator Bingham: I am speaking of a surprise attack, in case the aircraft was withdrawn.

Major General Coe: Yes, sir. I should think two or three antiaircraft guns, with two or three guns scattered over that area would be sufficient. I regard the 16-inch batteries as we now have them as very invulnerable. A direct hit on one of those guns is very remote. And it would have to be in the vitals, in the power lines. So they might hit a magazine and they might blow that up and you would lose one-sixth or one-eighth, or less, of your ammunition supply.

Senator Bingham: But in the dropping of a 2,000 pound bomb near the turntable would render it ineffective?

Major General Coe: Yes; if it hit very near it would put it out of action. I think if it hit 25 yards away it would not.

Mr. Coffin: General, the Martin bomber that you are using for towing, I believe that that ship has a bomber, as I heard it put the other night, is about as far out of date as Noah's ark?

Major General Coe: Yes, sir.

Mr. Coffin: And the manufacturers already have laid down bombers of equal capacity which will carry their load some 18,000 feet with supercharging.

Major General Coe: Yes, sir.

Mr. Coffin: And that the present bombers are nowhere the bombers of the next year or two.

Major General Coe: I agree with that thoroughly. And the Ordnance Department is working hard on a few problems, and have been at it for some time, and I think they will all be solved shortly.

Mr. Coffin: There is one other point you made in regard to this matter of the Air Service vs. Air Forces, which we have heard discussed several times. The distinction being made is that the Air Service is that portion of the Air Force which serves the different armies?

Major General Coe: Yes, sir.

Representative Vinson: So if we have six armies in this country we have six different air services, but that is an independent Air Force which would probably be desirable as a reserve for independent operation. I take it from what you said that you consider the air situation in this country very much different from what the Europeans consider their situation. As, for instance, in Europe I think that we encountered this attitude of mind, that any future war will inevitably open with great aerial activity far in advance either on land or sea so that victory may be inclined to that belligerent force which has to a greater extent the supremacy of the air. You do not feel that we are quite in that situation. I take it?

Major General Coe: I do not think that conditions are the same here as they are on the Continent or adjoining countries; no, not at all; but I do not see that as far as the proper organization goes that makes any difference. It seems to me that in the continental countries they should have an air force all ready or they will be prepared for attack, or perhaps for conquest, either one. But I cannot conceive of a situation arising in which the air force is going to finish the war. I look upon it as impossible. If it is all right to talk about countries I do not believe that England could

ever be subjugated by attacks from the air. I think that they would go and live under the ground and fight until they were all dead before they would be subjugated if there were a vital point. That is another thing. If they think it is rather a trivial thing they will see a few bombardments and will give up, but if there is some vital issue there I do not think England could be subjugated.

The Chairman: Do you think you would be speculating on the stoutness of heart of the people when you say they could be subjugated by an air attack?

Major General Harbord: And they could not hold anything when they got it.

Mr. Coffin: Is it not a fact, General, that the air forces in Europe are being built in exactly that way?

Major General Coe: I think so.

Major General Harbord: And that England has created her air force to meet an entirely different condition from what we have here?

Major General Coe: Undoubtedly.

STATEMENT OF MAJ. GEN. JOHNSON HAGOOD, U.S.A.

Senator Bingham: Will you tell the board whether you have any advice that might help us toward bettering aviation based on what you learned this summer?

Major General Hagood: Well, I am in favor of the Air Service having a number of the things which they are demanding, not in the extreme to which they want it. I think the Air Service in the War Department ought to be largely divorced from the present General Staff control. I think they ought to handle their own funds, estimates and so forth, and I think they ought to have their own separate line of promotion.

I am not very familiar with the War Department as it is organized now, and perhaps I ought not to attempt to criticize conditions in the War Department when I have not been on duty there for nearly 15 years. But I have seen a good deal of the difficulty under which the Air Service people are laboring at this time, not so much during these recent tests as at other times.

I will say first with reference to the question of the General Staff control of the Air Service in the War Department—I think it is very generally believed throughout the Army, perhaps throughout the country, that the General Staff as we now understand it has largely invaded the rights and prerogatives of the so-called technical bureaus of the War Department. A great many of the things which are prescribed by law to be performed by the technical bureaus are now being performed by the General Staff. Some of the older services have not suffered very much by it. Others have suffered tremendously by it.

My judgment is that a new service like the Air Service does not have an opportunity to develop properly with this very close control that the General Staff must of necessity exercise over an arm of that kind under the present organization. It must be understood that the General Staff as we now have it is recruited from officers who have graduated at the air schools. Those officers have opportunities at the service schools to study tactics and methods of combat. They make map problems and so forth. But they do not get training in the greatest of all schools, the school of experience, when it comes to matters of administration and supply, and I know that there are a great many young officers in the War Department who have been on the General Staff who have administrative and supply problems presented to them that they are not qualified to solve. I know that from my own personal experience, because as a young officer I served myself two tours of duty as a General Staff officer in the War Department, and I know how little I knew then of the problems that were often presented to me.

A great many people will say that the General Staff is invading the prerogatives of the bureaus. There have been several laws passed to prevent it, but it is much easier to say that than it is to prescribe a remedy. I would like to suggest a remedy so far as the Air Service is concerned.

When I first went to the War Department some 15 or 20 years ago there developed in the War Department an organization which I think would be ideal for the Air Service now, and that was the office of the chief of Coast Artillery as it was administered under Gen. Arthur Murray. At that time General Murray, the chief of Coast Artillery, was an ex-officio member of the General Staff corps and was an assistant to the Chief of Staff. His office was a division of the General Staff. He handled all of his estimates of appropriations and all other questions directly with the Chief of Staff, not with any member of the General Staff except his own office. His appropriations were handled by a separate committee in Congress.

The result of it was that the Coast Artillery went forward and the coast defense went forward until they not only became the most efficient branch of the Army but they were admittedly the most efficient coast defenses anywhere in the world. Of course the other services became jealous of that and properly so. The Coast Artillery forged ahead of the rest of them, but those conditions have been very much changed.

I believe that in a new arm like the Air Service they must be given a tremendous amount of latitude. They must be allowed to make mistakes. They must be allowed to spend a lot of money foolishly, and they must not be put down under a condition where committees and boards, we will say, if I may say that, get together and listen to all of these different things and then make decisions, because it is a well known fact that boards must always make compromises between the conflicting opinions that they receive.

Now of course in this matter it is very necessary to differentiate between the Chief of Staff of the Army and the General Staff. A great many people do not make that distinction. The office of Chief of Staff was created in order to take the place of the Commanding General of the Army. The Chief of Staff is the head of the Army, and he should have complete control over all elements of the Army, but the General Staff was created at the same time—I think perhaps it is unfortunate that it was created at the same time—to fulfill an entirely different purpose, and that is the purpose of making plans for war, and I believe that both Secretary Root and General Carter, who were the officers of the General Staff at that time, are on record as saying that they never contemplated that the War Department General Staff would go out into the duties which it has gone out into since.

So that in my opinion if the chief of the Air Service was an assistant to the Chief of Staff or his office was a branch of the General Staff, call it G-6 or something of that kind, or if he dealt directly with the Chief of Staff and had the same relations to the Chief of Staff that the chief of the

Coast Artillery had in, say, 1910, in my judgment so far as the War Department is concerned, the Air Service would occupy an ideal position.

The Chairman: On that point, General Hagood, you would have the Air Service function not through the General Staff but through the Chief of Staff of the Army?

Major General Hagood: Yes. I would like to say this, that a great many people do not realize it, that George Washington recommended to Congress the creation of a General Staff which consisted of all the elements of what we now call the General Staff. It consisted of combat, administration and supply, and his recommendation, I believe, for the General Staff of the Army was to have the Adjutant General of the Army, who was to provide administration, the quartermaster, who was to have supply, and the chief of geographical engineers in the Artillery who was to make the plans, and so forth. That general staff as it was created at that time drifted along for some hundred or odd years and got so far away from what we now consider a general staff that this new thing which we call a general staff was superimposed upon the old General Staff. That is a very broad question.

In my judgment, the Air Service is suffering today because they have not got officers in the proper grades. For instance, at Camp Stenberg I had a brigade of Field Artillery, a regiment of Cavalry and two squadrons of Air Service. The brigade of Artillery was well organized, had colonels of old experience, a fine staff and all that sort of thing. The Cavalry had the same, except the general. But the Air Service was commanded by a captain. He had by all odds the most important command there. It was his most difficult command, and yet that officer suffered in every possible way by his lack of rank. In the first place, his voice was never heard in council; and, in the second place, he could maintain no discipline over his own arm because he was only a captain. He was like one corporal trying to control a lot of other corporals, and I believe that the Air Service ought to have among themselves in their own corps men of sufficient rank to give them a proper arrangement. I believe they are entitled to 18 colonels. They have only three.

Representative Vinson: Twenty-five colonels.

Major General Hagood: They are entitled to 25. They only have three. Now, the senior lieutenant colonel, I believe, of the Air Service is No. 47 on his promotion list, and the senior major is something about the same.

I believe that the officers of the Air Service should be promoted to those vacancies. I believe that men like Hensley—and I can mention a number of others whom I have served with—are the men who ought to command those units. I do not say that line officers ought to be transferred in to do it. I have tried to do it myself, and I know what the difficulties are of a line officer trying to solve the problems of the Air Service.

Major General Harbord: Well, then, would you let them command the officers of the other lines?

Major General Hagood: I would give them their rank and it would not make any difference particularly whether they failed on promotion or not. I would make a provision, though, that these Air Service officers after they have served a certain length of time could be transferred back to the line in the grades they would have had if they had already been in there, because I do not think you can take an Air Service officer and keep him in the Air Service all of his life. I think most of the Air Service officers whom I know think that, too. They get stale on the job.

The Chairman: General, do you think there is any objection to transferring officers from other arms of the Service into the Air Service if they learn to fly and do not get permanent rank in the Air Service until they have qualified as flyers?

Major General Hagood: As to how the Air Service should be recruited in these higher grades I think that is quite true, that there are officers who could probably be transferred in.

Senator Bingham: General, you would not transfer any line officers into the Air Service unless they took the full training and took their wings as military aviators, would you?

Major General Hagood: No; I do not think that I would go as far as that, sir. I did not say that I would not transfer any. What I thought was that if we went back to the condition which we had before these services were amalgamated—and I do not see any advantage of amalgamating promotion unless we are going to get promotion as a matter of reward and nothing else—I believe if you create a separate Air Service, such as the Coast Artillery was, say, 10 or 12 years ago, I would make a provision in law as to how these vacancies should be filled. I do not think that passed officers who pass the prescribed examination or with the necessary qualifications required should be transferred in any great numbers; for instance, after the Great War we took in officers from the emergency force, and so on, but after that is done I believe that the Air Service ought to have its own line of promotion and that officers ought to go up and they ought to go up quite rapidly.

I would be inclined—I do not know that the aviation would agree with me—I would be inclined to do away with the double pay for flying and take away the money and use it to give them very rapid promotion and early retirement.

Major General Harbord: What about those that you were going to transfer back to the lower grades? Now you are talking about an early retirement. I understood you a moment ago that you said when they reached a higher grade you would transfer them to the grades that they would have gotten if they had stayed there.

Major General Hagood: It takes a great deal of detail to work all of it out. I have actually written out a scheme that I think perhaps would work out, although I do not care to submit it to this committee, because it is not fully worked out.

My idea would be this, that Air Service officers should have something extra and in a way that if a man does not reach a grade at a certain time you should get rid of him, either transfer him back to the line or put him on the retired list. There are a great many ways that it could be worked out.

Representative Vinson: And you state that the captain who served in that rank during the war suffered in aviation on account of his rank; you mean by that he sat in council with senior officers?

Major General Hagood: Yes, sir.

Representative Vinson: And his rank was such that senior officers did not listen to his argument or his thought?

Major General Hagood: Yes. In the Army we are so accustomed to taking rank as the criterion of authority that if an officer of junior rank, very junior rank, puts forward some proposition it does not carry the weight that it would if he had a great deal more rank connected with it.

Judge Denison: Does a captain ever argue with a colonel about something?

Major General Hagood: Sometimes. Now I will say that the corps area in which I have recently been serving, the corps area commander in connection with these Camp Tilden tests, and so on, made the statement, in which I concur absolutely, that is that the Air Service are always trying to do more than they should do, and he had to restrain them, and so forth, because if somebody asked them to do something they always said "Yes," where as a matter of fact he knew that they could not.

There are a great many line officers that do not know whether the Air Service can do things, and they are constantly being called on to do things which they should not do.

The Chairman: Your statement is more or less of a reflection on the independence of mind of the low-ranking officers?

Major General Hagood: Yes.

Representative Vinson: Perhaps that same argument accounts for the reason that all aviators practically here have endorsed General Patrick's proposition?

Major General Hagood: I think that that is not at all unlikely.

Representative Vinson: So your idea is that if we would reenact a separate corps along the line of the Coast Artillery Act of 1907 the aviation could be advanced?

Major General Hagood: I think it would advance very rapidly in the War Department. I think that there are a great many of the things which would go forward due to the natural impulse of men who have more freedom.

Representative Vinson: Would it not advance so fast that it might interfere with the proper mission and function of the other branches of the Army like you pointed out, the Artillery could not advance to a certain point where it got all the money it wanted and considered the cream of the Army? What effect would it have on the general Service?

Major General Hagood: It would have the same effect in the case of aviation.

Representative Vinson: Then you would have aviation very high and the balance of the Army not quite so high?

Major General Hagood: Yes.

Representative Vinson: And you think that would have a bad effect from a national standpoint, do you not, because it is out of balance?

Major General Hagood: No; I do not think so. There is this about it: In case we got into a real serious war the Army would be enlarged, say, ten thousand fold; that is, it would be enlarged from a hundred thousand to 10,000,000. The same degree of efficiency of certain arms of the Service in time of peace under those conditions would not amount to much. But from my own viewpoint I believe that our Navy and our Air Service should be advanced in time of peace to a condition of efficiency far beyond what it is possible to carry the Army at large. Therefore I say that we might be able to carry the whole Army forward very little, but I do not think that we can expect special services like the Air Service to be held back so everybody can go along with an even front, and I do not think that it would matter if the Air Service were a little in advance of the others.

The Chairman: Do you think, General, that it was a mistake to pass the act of 1920, doing away with promotion by arms?

Major General Hagood: Yes.

The Chairman: And you think it would be better to go back to promotion by arms?

Major General Hagood: No. Going back is different from not having gone. I think the thing is so connected up now that I do not think it is practicable to go back to all the arms, but I do think it is practicable for one arm like the Air Service, and I think it ought to go back for all staff departments. I think the staff departments of the Army, some of them, are in a perfectly dreadful condition now, and I do believe if war broke out we would do just the same as we did before and we would have to go through a reorganization right in the middle of the war.

The personnel of some of the staff departments, both officers and enlisted men, is very bad now so far as efficiency is concerned, and I attribute it to the fact that the staff departments in the old days had special promotion; they had special prerequisites, the enlisted men were specially recruited, and so forth. Now with the enlisted men promoted they are like any other recruit, say from New York; you send him to a post, put him in the Quartermaster Department, and he is perfectly useless. But the old services can perhaps do better than the Air Service can.

Mr. Coffin: Do you happen to know, General, whether the young officers in the Army Air Service have converted General Patrick, or did the General convert them to him?

Major General Hagood: I have not any idea what General Patrick's views are on this question.

Mr. Coffin: Well, on the corps matter?

Major General Hagood: I have never discussed it with General Patrick and I do not know what his views are. In fact, I do not know what the view on the corps question is of any of the young aviators I have associated with. I drew my own conclusions about it on account of my own difficulties that I had with these people when I served with them.

Mr. Coffin: You have had contact with General Foulois lately, have you, in these tests?

Major General Hagood: I do not suppose I have seen him half an hour since I saw him in France.

Mr. Coffin: You do not know, then, through how many channels he has received orders, do you?

Major General Hagood: No.

TUESDAY, OCTOBER 13, 1925

STATEMENT OF MAJ. GEN. MASON M. PATRICK, CHIEF OF AIR SERVICE, U.S.A.—(Resumed)

Major General Patrick: When I was before you some days ago I stated, and very correctly, I think, that the War Department is given a certain limiting sum of money; that with that sum of money it had to provide for the needs of all branches of the Army. That is undoubtedly correct. The Air Service gets its share. I had no intention of indicating that the Air Service of the Army was being starved in order that other branches might be provided for, for I believe that within that fixed sum of money the War Department has been as generous to the Air Service as it could be. I must qualify that statement by saying: As generous to the Air Service as now constituted. That is, with its too small numbers and too little equipment.

I wish to repeat my previous statement that the service type planes that we have are practically the equal of the service type planes in use by any other country in the world.

The Chairman: We had some testimony on yesterday, of which you are perhaps speaking, about first line and second line planes. Are they the same as standard and substitute planes of which you are now speaking?

Major General Patrick: One of the gratifying results of the air races just held at Mitchel Field was the opportunity given us to compare our two-seater planes with the French observation plane. Those two French planes are the ones that the French are building for their observation aviation. And the difference in speed between them and the ones that we put in that particular race was practically negligible.

Senator Bingham: Are those the Breguet planes of which Mr. Breguet stated the French Government had ordered one thousand?

Major General Patrick: I understand those are the planes of which the French Government had ordered quite a number, and the French have chosen that plane as their most modern observation plane.

Another thing I should like the Committee to know is that the planes we have in service are inspected most rigidly before they are taken into the air. No man is allowed to take into the air a plane that is regarded in any way as unsafe. And the quality of that inspection I think is proven by the fact that within the last four years there have been exceedingly few fatalities due to any structural failure of our service type planes, of those built in this country.

The Chairman: You say you are using 40 planes which are obsolete and could not be used under any circumstances in time of war, making a grand total of 1,436 planes.

Major General Patrick: That is correct, yes, sir.

The Chairman: And I presume that the 396 planes that you refer to as standard are what would be called first line?

Major General Patrick: Yes, sir; practically that, Mr. Morrow.

The Chairman: And the 1,000 substitutes for standard planes are second line planes?

Major General Patrick: Yes, sir; practically second line. It is just a different phraseology that is used, but it means the same thing. In connection with the planes that we have I should like to say, if I may, a few words about the testimony which was presented to you on yesterday by the Chairman of the Committee on Appropriations of the House of Representatives, Hon. Martin B. Madden.

Mr. Madden seems to think that the experimental and research work which we have done has not been worth while. Of course, that is a matter of opinion. I balance against it a statement made to me within the last three days by Mr. Orville Wright, who is certainly an authority upon matters of that kind. Mr. Wright told me that the research and experimental work which has been done was the most valuable contribution to aeronautics, and provided better for the development of an air force in this country than any other work which we had done.

It is a matter of absolute fact, of course, that some experimental work that you have to do merely shows you things that you ought not to attempt. That is not money wasted. It points the way very clearly to what you ought to do, and guards you against making mistakes.

It was suggested by Mr. Madden, I think, that all this experimental work might well be turned over to private agencies. I disagree there, and think that would be a very grave mistake. In the first place, you could not control it; you could not direct it along lines you wanted it to follow. It would be scattered hither and yon, and the results would have to be checked anyhow.

Mr. Madden also spoke of the 260-odd pursuit planes, and quoted my testimony to show that the vision was not good, is the way I think he put it. That is a fact. But I think the story of those planes will probably be sufficiently interesting to you gentlemen for me to state it briefly.

The Chairman: Are they included in any planes you now have?

Major General Patrick: They are included in some we now have.

Orders for those planes were placed before I took office. When they were ordered it was the best design of pursuit plane in this country or anywhere else in the world. When they were ordered we had no pursuit planes. The fact that we did get them gave us some which could be used and which would have been the equals of those that could be brought against us.

My testimony which Mr. Madden quoted was quite correct, and it was given to a Congressional Committee when I was explaining to them the improvements we were making in pursuit planes, and giving my reasons for adopting a much more modern type.

Senator Bingham: Who was the Assistant Chief at that time?

Major General Patrick: General Mitchell was the Assistant Chief at that time.

The Chairman: Your expression in the record which was quoted by Chairman Madden of the House Appropriations Committee on yesterday was that the field of vision is small.

Major General Patrick: Yes.

The Chairman: I presume that in the construction of the plane you had to sacrifice some vision in order to get some other quality that you wanted, and you were willing to sacrifice other qualities to get greater vision as the experiments have gone on.

Major General Patrick: That is substantially a correct statement, Mr. Chairman.

Representative Vinson: The Assistant Chief of the Army Air Service at that time had full knowledge of the type of planes?

Major General Patrick: Quite so.

Representative Vinson: Who else aided him in passing on the quality of the planes?

Major General Patrick: I cannot tell you that, Mr. Vinson.

Representative Vinson: Then it would be the Assistant Chief of the Air Service of the Army and the Chief of the Air Service of the Army who would pass on them?

Major General Patrick: They would, undoubtedly.

Representative Vinson: And these planes were on hand when you came in?

Major General Patrick: Yes, sir; they were coming in there. They were not all through when I took office, however.

The Chairman: I want to get the record clear on this one point: You have 396 planes of what you call standard, of which only 26 are pursuit planes.

Major General Patrick: Yes, sir.

The Chairman: Then these 262 planes of the MB type that were ordered by General Menoher before you came into office, upon the recom-

mendation of General Mitchell, Assistant Chief, as we understand it, they are not now included in your standard type?

Major General Patrick: No, sir. They are included under the substitute for standard. I have in the table I gave you there a total of 133, I think, of them left.

The Chairman: 133 of these 262 are included in the 1,000?

Major General Patrick: Yes, sir.

The Chairman: That are substitute for standard or second line planes?

Major General Patrick: Quite right.

The Chairman: And your feeling was that when they were built—and that was four or five years ago, was it not?

Major General Patrick: Yes; they were designed I really think back as far as 1918, nearly seven years ago, that that was when the design came out and they were ordered, I think, about 1920.

The Chairman: And your feeling was that at the time they were ordered they were unsurpassed by any other type of plane?

Major General Patrick: I am satisfied that at the time they were ordered they were the equal of the types then being ordered by any other country.

Mr. Madden spoke a good deal about the manufacturers yesterday. What I am trying to do is to have a consistent program so that we will order each year a number of planes of the different types, and thereby endeavor to keep those manufacturers in being by giving them as nearly as possible a constant flow of work to their factories.

The rest of Mr. Madden's testimony, as to the plan that he proposed for an air service, I think I can say that he is aiming at the same idea that I am; that he wants apparently there an air force which would be a united air force, and provide for the needs of both the Army and Navy. As I have previously stated, I do not think the time is quite ripe for that yet, but if it were possible I very heartily endorse the plan which he sets forth.

Senator Bingham: General, before we leave Mr. Madden's testimony, he said yesterday, referring to the purchasing of the 262 pursuit planes, that a pilot has difficulty in seeing out of, as he expressed it, he said he had heard something of a charge of criminal negligence, "but this borders on criminal waste; somebody was to blame." Do you think that he was a little hard on General Mitchell in blaming him for what he called criminal waste?

Major General Patrick: General Menoher was the man who authorized them, of course, finally. I do not think it was criminal waste. I think they did the best they could under the circumstances at that time; and what they bought at that time was, as I have already said, as good a pursuit plane as could be obtained anywhere in the world.

Representative Vinson: And if you could not see out of that pursuit plane you could not see out of any other at that time?

Major General Patrick: It was just as good as any other, Mr. Vinson. There has been some little question as to the relative air strength of the different powers compared with our own. I have a table, a very brief one, which I think might throw some light upon it, and this shows that France has a personnel, including both officers and men, of, in round numbers, 36,000; England, 32,000; Italy, 11,000; Japan, 8,000; and we, ourselves, including both Army and Navy, have practically 15,000.

Of the service types of planes, the French have in service, according to the best reports I can obtain, 1,500; and in reserve about 4,000.

The English have in service types, in round numbers, 1,000 planes; Italy, 800; and Japan, 800. But of the 800 that Japan possesses, at least 100 of them are very old and antiquated and out-of-date seaplanes.

The Navy, according to my best information, have 371 of the service type, so that combined Army and Navy would be, in round numbers, 1,400—I beg pardon, it was 684 for the Navy.

Mr. Coffin: Will you revise that total for the United States. You said the Navy had 684.

Major General Patrick: Yes; 684.

Mr. Coffin: And the total for the United States, what total does that give?

Major General Patrick: May I put that in, Mr. Coffin? The figure that I have includes the Navy training planes as well. I do not have their service planes. It looks as if it was probably 1,400 both Army and Navy.

I may say, in addition, that these foreign governments have actually planned certain expansions. For example, the French propose to increase and now are increasing their personnel to 43,000, against their present total of 36,000; they propose to increase the planes they have actually in service from 1,500 to 2,200.

The English propose to increase their personnel from 32,000 to 36,000; and their planes in service from 1,000 to 1,600.

Italy's plan is to increase its personnel from about 11,000 to 31,000; and the number of planes I cannot give, but presumably it will be proportional to the increase in personnel.

Japan plans to increase the personnel for the Army to about 6,200, and to have a total of 1,200 planes.

I might contrast these figures with the ones which the Lassiter Board recommended for ourselves, a personnel of 31,500, and planes of service types, 1,898.

The Chairman: And your figures are that we have 1,396 standard and substandard, including training planes.

Major General Patrick: Yes, sir.

The Chairman: Making a total of a little over 2,000?

Major General Patrick: Yes; and subtracting those I mentioned, 1,025.

The Chairman: To which you would add the Navy planes exclusive of training planes?

Major General Patrick: To which I would add the Navy planes, exclusive of training planes, whatever that figure may be.

The Chairman: That would compare very well with the French planes actually in service, would it not?

Major General Patrick: Yes; with the planes actually in service, but remember, as I have shown here, they have directly behind the lines and which they can throw in service in two weeks, 4,000 more.

Furthermore, the French have a system by which they put their planes in service for a brief period of time and then they retire them to the reserve, so that I am satisfied that the reserve that is put down there consists of practically new planes, certainly planes that can be used.

The Chairman: Would you attach much importance to the character of the personnel and comparison between number in the United States and France, in view of the conscription they have in France, and the fact that they have pilots from amongst the enlisted men?

Major General Patrick: Oh, I think so, Mr. Morrow. The fact that they have conscription in France enables them to pick out exceedingly good men among the personnel for training. That is the trouble we have here. We have only about 50—I am quoting from memory—merely because our system of recruitment brings in men of all grades of intelligence.

Senator Bingham: General, is it not true that the French have not developed their ground attack squadrons to the same extent we have?

Major General Patrick: They have done very little. They have done some, and my best reports are they have done in the last two or three years very little training, and they have not developed at all this matter that we call ground attacks.

The English have just developed a plane, in fact the builder of it is over here now, a two-seater, which is said to be faster than anything we have. It is merely an experimental plane, and in estimating any danger of air attack, of course, it would be perfectly useless to figure they would bring these planes over in quantities until they had actually built them.

Mr. Coffin: That plane, General, is being developed for a special purpose, is it not?

Major General Patrick: No; I do not think so; they are really trying to call it a two-seater fighter, and they can use it almost anywhere. And one of the best things about it is that it is built around one of our own engines. It means that our designs and our engines are as good as can be found anywhere. It is a Curtiss engine, really the same engine that we are using with our pursuit planes.

It is manifest that at present there are no aircraft—that is, not airplanes that can fly across the ocean and set up an attack against our coasts. They must be brought over somehow. It is barely possible that a foreign government might concentrate a large number of planes somewhere within the limits of this continent. Otherwise, they have got to be brought on aircraft carriers, on naval vessels, or they have got to be concentrated on some islands that are in the possession of foreign countries, and near enough to our shores. Of course, to make a serious attack or any attack, in fact, by air those carriers would have to elude our fleet for the fleet would have to be defeated before they came close enough to our shores.

To oppose them we could put into the air certainly all of the planes I have called the standard or first line, inclusive of the training planes and we could use some of our substitute planes. It would be a good force, and could give a good account of itself. It would use up our force; we have no reserve of pilots or planes. Personally, I do not think that the danger is very grave. But developments are coming very fast, and we will have to meet them in some fashion. It is quite possible that planes will be developed that can fly across the ocean, and then the Navy which is now undoubtedly our first line of defense, will not be so powerful and not be so effective.

We of the air corps are satisfied that there is a field which anti-aircraft weapons must fill; we must have some of them. They will have a deterrent effect. They will interfere with the aim of the air man. But we are absolutely satisfied that alone they cannot protect a city, an army, or a fleet from air attacks.

I think that it almost goes without saying that the only real defense against an air attack is aircraft of your own.

The Chairman: We have not met any naval man, I think, General, who has not stated very specifically that he wants all the air force he can have.

Major General Patrick: I am thoroughly sure of that.

The Chairman: The only difference of opinion has been between some of the air men and commanders.

Major General Patrick: Yes; I think so. I shall not express any view. I am not a naval officer.

Senator Bingham: General, might I ask how long the Army has been using a sight which is a marked improvement over the sight which was used during the war?

Major General Patrick: About three years, if I recollect correctly. I ordered within the last two years 100 of what we call the D-1, D-2 and D-3 sights. I would rather not go into the details of it, if you don't mind, but we have been using them, and we are getting them in quantities, and with them we are obtaining exceedingly good results.

The Chairman: Would it be fair to sum up your point with reference to all these bombing tests by saying that you feel the data we have with reference to the effect of bombing is far from complete and there should be liberal appropriations to enable proper bombing tests to be made?

Major General Patrick: I did not say anything about liberal appropriations, Mr. Morrow. I would like to say this: I think they are entirely complete, but I think the conclusion reached by the Joint Board after those tests is perfectly sound and we can stand upon it, and their statement was that it had been proven that bombs from aircraft could put out of commission or sink any surface vessel that had up to that time been designed or built.

The Chairman: That is generally accepted by everybody, that statement, it being assumed always that the vessel is quiet and the bomb reaches it either from under the water or from the air.

Major General Patrick: This same naval authority that I quoted a moment ago made his statement in this way: Everybody knows that aircraft can fly over land and water and will carry and drop bombs that will sink any surface vessel.

Judge Denison: If they are not interfered with, of course, that means?

Major General Patrick: Oh, of course, Judge, yes.

Mr. Coffin: General, what type of naval vessel do you want, a high speed destroyer?

Major General Patrick: Yes, I want a high speed destroyer.

Mr. Coffin: Is it not a fact that the British are paying no attention to bombing?

Major General Patrick: Very little.

Rear Admiral Fletcher: General Patrick, there seems to be some difference of opinion as to the efficiency of bombing and as to the efficiency of anti-aircraft guns. Would it be possible to devise a series of experiments so as to determine just the efficiency of these two methods under war conditions so that we could get onto the value of air craft and anti-aircraft under war conditions?

Major General Patrick: I thought of it, Admiral, a good deal, but I do not see how we could precisely get under war conditions.

Rear Admiral Fletcher: Continuing my questioning: You can devise experiments to determine the efficiency of anti-aircraft guns without the use of a bombing plane itself?

Major General Patrick: I have gotten up, Admiral Fletcher, a little

gliding target which can be released from a plane up at considerable height and which will go through a number of maneuvers in the air. It has no power and does not fly rapidly. I am developing that as an anti-aircraft target but I have not yet been able to determine or devise a way by which we could give them what I would call actual battle practice.

The Chairman: In general they develop weapons of war in time of peace so that they can estimate quite accurately what is going to happen in time of war?

Major General Patrick: Right.

Rear Admiral Fletcher: And if we could determine the efficiency of anti-aircraft guns, that is, the percentage of hits that could be made upon a target as near as you can simulate war conditions, and at the same time determine the percentage of hits of a bombing plane under conditions as near as you can determine in time of peace, then superimpose those two upon each other, you can determine pretty accurately what would happen in time of war, can you not?

Major General Patrick: Approximately. Just as your navy goes out and has its target practice and it can find out how many hits it can make in peace time, and then it estimates in some manner about how many hits it would probably expect in time of war. You can do the same thing with anti-aircraft fire in bombing from the air.

I should be very glad to carry out this mandate of Congress and to bomb a moving target which will show what we can do. I have no doubt of our ability to hit it or to put bombs close enough to it to injure it. To show what can be done I would be very glad to do it. We have the money. It is a mere matter now of getting ships.

Representative Vinson: If you take out the word "obsolete" you can get a naval ship?

Major General Patrick: Well, if the Navy would turn it over, Mr. Vinson, yes, sir.

Representative Parker: General, Captain Rath testified here yesterday that they bombed always from two and a half miles to three miles.

Major General Patrick: Why, I am satisfied from what I saw myself that a great deal of the bombing was done from a very much lower altitude than that, Mr. Parker.

Representative Parker: And he said that the English bombed from 20,000 feet, during the war, I am speaking of.

Major General Patrick: Of course I cannot speak accurately, but I do not have any record nor any knowledge of a single bomb dropped during the war from any such height as 20,000 feet.

Representative Parker: I was wondering why your experiments were not conducted at that height instead of 6,000 or 7,000 if that was really the height that the men had to bomb from?

Major General Patrick: We are getting higher and higher with them. And the explanation, I think, is rather simple, Mr. Parker. We took these bombs up to 11,000 feet. That is the highest in our experiments that we have carried one in order to get the plane up with its load to that height, and then we have to put what we call a supercharger on the motor. I am preparing to supercharge most of my bombing planes which will carry them up to 15,000 or higher.

Judge Denison: My recollection was, General, that his testimony also was that while they preferred to bomb from their ceiling, their weather conditions frequently drove them down to lower altitudes and that is where they had their great trouble.

Major General Patrick: Yes.

Representative Parker: General, if you did have an obsolete vessel provided how long would it take you to stage that show? What would be the quickest time you could do it?

Major General Patrick: I would like to have about a month.

The Chairman: The English have, according to your figures, about 1,000 planes under the control of the Air Ministry, which includes all that the Army and Navy have?

Major General Patrick: Yes; but it does not include commercial planes.

The Chairman: No.

Major General Patrick: This unified Air Service was adopted in Italy about two and a half years ago, and the Premier, Mussolini, in addition to his other officers, is Air Minister. I think actually he is Minister of Defense. He controls the Army, the Navy, and the Air.

The French system is a little more complicated on paper. They have, as you know, a very small Navy and a very small naval Air Force. Not expecting to be attacked by sea they have concentrated practically upon the development of the land Air Force. That is under the Minister of War. Then they have a Secretary who deals with aeronautics, and under him comes Commercial Air Transportation. Under the Department of Public Works they have a bureau which does all the research work and does all supply work. Practically it differs little from our own system.

The Japanese likewise have a system similar to our own. They have an Army Air Force and a Navy Air Force. They are bending most of their efforts now to developing manufacturing plants of aircraft and motors so as to be independent of the rest of the world. They see, however, the importance of this air component, and they have recently demobilized four divisions of ground troops in order to provide more funds for developing their air components.

STATEMENT OF HON. HARRY S. NEW, POSTMASTER GENERAL, U.S.A.

Since being notified by your committee that I was to be recalled, I have sought to refresh my memory. In my opinion a statement of our aircraft troubles in the World War may be summarized under three heads:

1. The failure of the government to take a single preparatory step toward the encouragement of aviation.

2. The confusion that resulted from the effort to accomplish in the early days of the war what should have been done long before—namely, the creation of an aircraft industry.

3. Failure of the public generally to perceive the ultimate commercial possibilities and value of aircraft.

Then, too, I have been informed that the fact that as a Senator I introduced a bill for the creation of a separate executive department to deal with aviation and that since that time my views have been somewhat modified has been made the subject of some comment.

Failing in all efforts to secure coordination in any field, I sponsored a bill to create a Department of the Air, the most important provision

of which I regard now as I did then being the division of civil and commercial aeronautics. It was then and still is my belief that successful commercial aeronautics and national air security go hand in hand.

Then I sought to reconcile the chaotic conditions due to divided committee control in Congress by the creation of a special Committee on Aviation, to which all matters relating to the subject should be referred just as military propositions are referred to the Committee on Military Affairs and naval matters to the Committee on Naval Affairs. I believed then and still believe that such a committee would be very helpful. I tried time and again to have one appointed but the standing rules of the Senate would not permit.

The question of command of military and naval aviation is one to be determined by military and naval authorities, in which I am not concerned. What I have in mind is the assurance that we shall have in this country an industry that will be capable of supplying the Army and the Navy with air equipment, and the question of command is one they may very properly settle for themselves.

I would begin by saying that our first need is for a continuing national program for the promotion of aeronautics. Commercial aeronautics is the cornerstone of the whole structure. If as the result of such a program we succeed in establishing air lines, that means factories and skilled mechanics familiar with the subject to build the planes; it means training and keeping in practice of pilots to fly and the mechanics to keep ships in repair. It necessarily means airports, landing fields, hangars, airways and all of these, beginning with the productive capacity of the industry, can be quickly turned to military account in case emergency requires.

If the question is asked of me, "What is the commercial future of aeronautics," I would frankly reply, "I don't know." I believe, however, that the possibilities are so great that it becomes a matter of first national importance to ascertain for ourselves as nearly as may be just what they are and I do not believe that as a Government we have ever yet intelligently undertaken to do that. A pilot should be examined and qualified by competent authority before it is legally possible for him to fly a ship at all. There is now no authority for this anywhere. The Government provides for the inspection of steamboats and of boilers and decrees that they must meet certain requirements before they may be operated, but any kind of rattle trap airship can be taken up by any sort of an irresponsible flyer now so far as anything the Government does to prevent. There is not a little legislation to be passed defining the rights and liabilities of aircraft in the air and on the ground. There should be authority somewhere to make the necessary recommendations for the legislation required to meet these things.

I do not think the Government should compete with aircraft transport any more than it does with the railroads and this refers to the air mail as to everything else, and I would reaffirm the statement I made on my previous appearance before your committee that "it is not my belief that the Government should permanently continue to provide this service under Government auspices and at Government expense." I do think, however, that the Postmaster General should be given authority and provided with the means to develop and operate air mail routes in addition to the Transcontinental Mail and the New York-San Francisco route, within reasonable limits.

The Postmaster General should be authorized by law and funds appropriated for the development of aircraft most suitable for commercial purposes. It should be made possible for him to experiment with safety devices. I feel that the expenditures of the Post Office Department in this field have been extremely reasonable and that they have produced results in the way of knowledge of what can be done that more than compensate the Government for all the money that has been spent by it, to say nothing of the physical accomplishment.

I think probably the best forward step that can be taken would be in the passage of what was known in the last Congress as the Winslow bill, introduced by Representative Winslow of Massachusetts. Incidentally, I might say that that bill was prepared by a committee of the American Bar Association together with one appointed by the Department of Commerce.

Speaking in general terms, I would recommend its passage. If it is to be reintroduced, however, it should be in the form desired and already recommended by Secretary Hoover as its administration will fall within the purview of the Department of Commerce.

I think the Department of Commerce should be given authority and supplied with means to provide for lighted airways for the use of companies engaged in aerial transport.

If air lines are to justify their existence they must be operated at night as well as by day and it is impossible to do this without lighted airways.

I believe that the metal airplane is the safest and most logical type for use in war times and that it should therefore be given preference in peace time operations. It is my belief that they can be manufactured at less cost and operated with less hazard than those made of wood. I would therefore suggest that each of the existing service types of airplane be redesigned for metal construction.

I would still recommend the creation of a Committee on Aviation in the Senate and House of Representatives.

I most certainly believe that aviation is such a complicated science that in order to get rapid and economical growth aviation specialists, particularly designers and engineers, must be recognized.

Up to this time the Post Office Department has never had a ship that really meets its needs. One point greatly to be desired is the development of a plane with lower landing speed than any now in use, something that is suitable to small emergency fields and one that is capable of carrying at least 1,000 pounds of mail. Several times we have been required to send two ships to carry the load offered.

The military and naval services have aircraft designers of great intelligence and proven ability and in order to keep our military aircraft in the lead these designers must be carefully considered.

Senator Bingham: General New, in view of what you have just said, would you not recommend that the Army proceed with their studies at McCook Field in connection with directional radio?

Postmaster General New: Yes.

Senator Bingham: So as to guide a man in a fog and give him his height and his direction, and so on?

Postmaster General New: I would.

Senator Bingham: I was told by one of the pilots the other day at Mitchell Field that he has flown 300 miles guided entirely by directional radio.

Senator Bingham: General New, have you considered the possibility of promoting our trade with South America by giving us more rapid transportation of mails through such route as flying, say, from New York to Key West, and thence across to Cuba, and thence down the shores of Central America to Panama?

Postmaster General New: Yes, Senator Bingham, I have. And I think I may as well say in reply to that question something that has never yet been made public, although I do not know why it should not be, that a year ago I sent a couple of Post Office Inspectors—and with them, through the cooperation of the Army, representatives of the Air Service of the Army—to make a survey of the possibilities of such a route.

These gentlemen went down through that section, reached a conclusion for themselves that there was not enough business to justify the inauguration of such a line, and came back and so reported.

STATEMENT OF MAJ. GEN. MASON M. PATRICK—(Resumed)

I recommended and still recommend that the air force be made a separate corps under the Secretary of War.

This air corps—I will change that slightly and say that as you know the War Department has not the air force that would be needed in time of peace and in time of war.

The report of this Lassiter Board has been cited a number of times. I agreed substantially with the conclusions of that board; there were a few minor points about which we differed. I agreed as to the strength to be given, and as to the way in which it was to be brought into being.

Now, my program for the air corps is based solely and entirely on this report of the Lassiter Board. This proposes that this corps should consist of a chief, some 4,000 officers, of whom about 1,000 will be temporary, 2,500 flying cadets, and 25,000 men. These will constitute the regular air corps. In addition to that there will be the National Guard air unit and an air corps reserve. The chief of the air corps will report directly to the Secretary of War.

In order that these matters may be properly coordinated in the War Department, and with the Army, under the direction of the Secretary, I propose that an Assistant Secretary of War shall be charged with that duty, in addition to the others that now devolve upon him. I propose that in his office there shall be placed certain air corps officers, and likewise air corps officers will be detached for duty as liaison officers with the various sections of the General Staff; air corps officers will also be placed on the staffs of the commanding officers of the ground troops at corps area headquarters, the latter for the express purpose of handling matters connected with the National Guard air unit and with the air corps reserve.

This is just a tentative proposition, but I believe that the chief should have the rank of major general. There should be five brigadier generals. One of these in the chief's office would really be his understudy, and would take his place in his absence. Another in the same office would be in charge of all training operations. The third would be in charge of all supply matters. The fourth I would place in charge of my flying training, among them a training school, and give all training there. And I can interject right here that I can see no reason why, no matter what be the organization of the Army and Navy, why all primary training should not be given at one place.

The fifth of these general officers I would put in command of the air brigade, which I would form under this air corps.

I would have about 2½ percent, or about 90 colonels; 4 percent or 160 lieutenant colonels; 10 percent, or 400 majors; 20 percent, or 800 captains, and the remaining, about 63 percent, will be first and second lieutenants.

Now, to contrast these percentages with those in the other branches. As I have just said, in this air corps I propose that the colonels should constitute about 2½ percent. According to the law under the Army organization at present, 4 percent of the line officers are colonels. In the Navy of the rank corresponding to colonel, likewise 4 percent of the line officers are of that grade.

In the Marine Corps the colonels constitute a little more than 3½ percent; lieutenant colonels, air corps, 4 percent; the Army at present 4½ percent; the Navy 7 percent; the Marine Corps 4-10 percent; majors, air corps 10 percent, Army 15 percent, Navy 14 percent, Marine Corps 12 percent; captains, air service 20 percent, Army 30 percent, Navy 32½ percent, Marine Corps 30 percent.

First and second lieutenants, air corps 63 percent, Army 46 percent, Navy 41 percent, Marine Corps 50 percent.

In other words, it is proposed in this air corps to have a larger percentage of junior officers than in any other military organization of the United States. Similarly, the percentage proposed for officers in grades above that of lieutenant are in every case less than those in other military components.

Furthermore, it must be distinctly understood that it is proposed to bring this air corps into being gradually by yearly increments extending over a period of ten years, so that in any one year not more than one-tenth of the vacancies in any of these grades would be filled.

This is distinctly not a promotion scheme. It is not intended to secure promotion at any substantially greater rate than that which prevails in the Army now. As an illustration, assuming that this plan is carried out and that by the end of the first year and the first increment, 10 percent of the vacancies in the grades of colonel, lieutenant colonel and major are filled, the junior colonel in the air corps will be 52 years old and will have had 28 years' service.

In the Army at the present time—this was written about a week ago and may have been changed since—but in the Army at the present time the junior colonel is 56 years old and has had 27 years' service. The junior lieutenant colonel will be 39 years of age and will have had 18 years' service, while in the Army the junior lieutenant colonel now is 46 years of age and has had 23 years' service. The junior air corps major will be 35 years old and will have had nine years' service, while in the Army the junior major now is 35 years of age and has had only eight years' service. At the end of ten years, not considering casualties, the junior colonel in the air corps will have had 26 years' service, the junior lieutenant colonel 19 years' service and the junior major 18 years' service.

At the end of ten years the condition is about the same.

The commissioned and enlisted personnel of the Army, Navy and Marine Corps are all being paid under the Service Pay Act of June 10, 1922, and there is no danger that this plan which I am proposing now will entail any greater cost by reason of any change that will take place.

Now, there has been a great deal of stress laid on this unity of command, the necessity for a single directing head. As a matter of fact, I believe as strongly as anyone in the necessity for this unity of command, and I think the only way it is possible to get it is by this department of national defense. There will be a single directing head then, and all the defenses of the country will be under this single directing head. In default of that I am asking for this air corps. It is to be directly under the Secretary of War, and he, himself, will be the directing head of the air corps, as well as all the other branches of the Army.

If the Navy is close enough to our shores to play a prominent role in coast defense, it will be because it has been driven from the sea by a fleet which is its superior. Under these conditions, coast defense is certainly not a Navy problem but one which is to be undertaken by other agents. For such air scouting or patrolling as may be necessary beyond the limits of shorebased aircraft can reach, Navy aircraft operating from naval vessels will, of course, be employed. Within these limits, aircraft which operates from shore bases would, of course, be those which belong to the air corps, whether they operate directly under its chief or under the command of local Army commanders.

I do not for a minute visualize a condition where the Navy will step out and the air corps step in, or the land forces step out and the air corps step in. But I do think that the Navy within its proper sphere, will say to the air corps: We are going to attack, and you will conform your maneuvers to ours; we will assist you in every way we can, and you will assist us. Similarly, if the invading host comes near enough to be in reach of a shore battery, I see no reason why the air force cannot stop and the coast defense cannons begin to roar. They will go ahead under the commanding general in that district, whatever you choose to call him, and the air corps would act under him, and you would still have your unity of command.

Now for the Navy to have in addition its scouting planes, operating from shore bases, and its bombing planes operating from shore bases is simply a duplication. The Army must have them. And we can operate any type of plane. We have already developed an amphibian plane which can float on the water, and which can take off both from the water and from land areas. We have sent out scouting planes in time of peace, and there is no reason in the world why we could not send them out in time of war.

The Chairman: How about convoy work, General?

Major General Patrick: Convoy work, as I visualize it, will be done entirely by the Navy. The convoy vessels will have with them their air corps, and their aircraft. In starting their aircraft they will have to find that the water is clear, and that can be done by the Army as well as the Navy. And then after that, when they come to the escort, they will meet it at that point, and it is turned over, and we have nothing further to do with it.

I see no reason to set up any special machinery to coordinate this service for the separate air corps with the services required for the other branches of the Army, or to set up any machinery to coordinate the air corps to work in any other or different way than they do at present. The office of the Assistant Secretary of War through the transfer of funds between the agencies concerned can readily arrange this, as now authorized by law.

I do not think I exaggerate the role that aircraft will play in future wars. I am fully aware that, like everything else, they have their limitations. I do not for a moment think that this air force or that aircraft are going to displace or do away with armies or navies. I do say that I feel that we have minimized somewhat the importance of these other branches as means we can employ to defend ourselves.

I look upon this matter of national defense and the amount that Congress appropriates for it merely as an insurance against national disaster.

I have asked for a separate budget for the air corps. I think it should have one, and I can say emphatically that the cost, according to my plan for a separate air corps, will be no more than the cost if things remain as they are.

Representative Vinson: The authorized strength of the officer personnel of the Army is approximately 13,000, is it not, by Act of Congress?

Major General Patrick: About that, I think.

Representative Vinson: The authorized enlistment runs about 125,000, and you have about 112,000?

Major General Patrick: About 112,000.

Representative Vinson: Now, of the 112,000 that is authorized you want 25,000 of them with aircraft?

Major General Patrick: I did not say that, Mr. Vinson. I said we wanted 25,000 ultimately, at the end of ten years, in the air corps. Whether it comes out of the Army is a very different proposition. This Lassiter Board distinctly stated that they wanted the air corps as built up to be in addition to the other strength of the Army.

Representative Vinson: In addition to the 112,000, the Lassiter Board recommends 25,000 men to be enlisted for specific aviation work?

Major General Patrick: That is correct.

Representative Vinson: Does that same line of reasoning follow with reference to the officers?

Major General Patrick: Not quite. It is a question of pilots with us. Our proportion is larger in proportion to enlisted men, than in other services.

Representative Vinson: Then you want both ground officers and aviation officers to come from the line?

Major General Patrick: No; not necessarily.

Representative Vinson: Where would it come from?

Major General Patrick: It would be created separately and entirely apart from the line.

Representative Vinson: Then instead of 13,000 officers in the Army, including the Air Service, according to your plan there would be 17,000 officers in the Army?

Major General Patrick: If the Army were kept at its present strength.

Representative Vinson: That is by law; approximately 17,000?

Major General Patrick: Yes, sir.

Representative Vinson: Now, how many airplanes of various types would it be necessary to keep in commission in peace time to be manned by 25,000 enlisted men and 4,000 officers?

Major General Patrick: The Lassiter Board fixes 2,500.

Representative Vinson: 2,500 in peace time?

Major General Patrick: Yes, sir.

Representative Vinson: Is that a number that you think would be sufficient?

Major General Patrick: I am basing my recommendation entirely on the Lassiter Board.

Representative Vinson: Then how many enlisted men do you allow for the upkeep of each airplane? That would be 100 men, would it not?

Major General Patrick: Yes, sir.

Representative Vinson: How many do you allow today?

Major General Patrick: There is no fixed allowance today.

Representative Vinson: When I said 100 men to each airplane—

Major General Patrick (interposing): It should have been ten.

Representative Vinson: Your authorized enlistment is 10,000 and—

Major General Patrick (interposing): Eight thousand, seven hundred and sixty.

Representative Vinson: And your officer strength is 1,074?

Major General Patrick: That is the present, but the authorization is 1,051.

Representative Vinson: Now, you have one major general, who will be the chief, under your plan?

Major General Patrick: One major general.

Representative Vinson: You have five brigadier generals?

Major General Patrick: Yes, sir.

Representative Vinson: And you pointed out for each one of them a certain duty to be performed?

Major General Patrick: Yes, sir.

Representative Vinson: And is not some duty of that nature performed by any officers in the Air Service today?

Major General Patrick: Yes; except in two cases. I have one assistant, a brigadier general, who is in charge of operations and training. I propose to have a similar brigadier general in charge of that. A colonel, or rather a lieutenant colonel is doing all of my supply work. The War Department itself, or rather the Secretary of War has, himself, said that he thought he should be a brigadier general. My training school, over which I propose to place a brigadier general, is not in being. I have two separate training schools within seven miles.

Representative Vinson: You have 25 colonels in the organization today?

Major General Patrick: I do not remember—

Representative Vinson (interposing): I think that is what the law is, and you want, as a matter of fact, three colonels?

Major General Patrick: In the Air Service there are only three.

Representative Vinson: Now, you testified this morning that you had 1,300 planes of various types in commission?

Major General Patrick: In commission, or reserve, and which could be put in commission and flown.

Representative Vinson: To operate 1,000 planes you have got 924 officers now and to operate your planes in peace time you would want 4,000 officers. Now are you not furnishing more officers for planes than you are today?

Major General Patrick: I have not enough today.

Representative Vinson: You have not enough officers?

Major General Patrick: No, sir.

Representative Vinson: Then the service is lagging for the lack of officers?

Major General Patrick: Absolutely.

Representative Vinson: You need more colonels and more majors?

Major General Patrick: I do not say anything about colonels or majors. We need more officers to operate the service effectively.

Representative Vinson: That happens in all military branches, does it not?

Major General Patrick: I am afraid so, sir.

Mr. Coffin: General, these 1,050 ships are not all used and in operation at this time?

Major General Patrick: No, sir, not at all in operation. I said that they were in commission and in reserve and ready, could be used.

Representative Vinson: What did you estimate the cost would be?

Major General Patrick: I said this morning off hand costing from \$60,000,000 to \$65,000,000.

Mr. Coffin: It has just been called to my attention, General, that with the exception of Canada, which signed with a reservation, all the other nations are prohibited from making treaties with the non-signatories of that convention?

Major General Patrick: I believe that was something of that sort, yes. We made that to fit our own situation. I think you are right.

Major General Harbord: General, if this corps which you suggest were created how would the annual increments of officers in the higher grades, field grades, be met?

Major General Patrick: The annual increments would be made largely by promotion. The question of transfer of other officers is one to which I have given a good deal of thought. There is one officer of the Army that I approached and asked to come in the air service who was a lieutenant colonel. He is not the only one that I would like to have. I would be quite willing to take a few, I am going to say hand-picked colonels and put them in the air service. I do not want many of them. It would block the promotion entirely if I did for men in the other grades. I could extend that to lieutenant colonels and to majors. I would go no lower. I have already taken in several majors from other branches who rank many of the majors in the air service who have had more experience really in flying. Otherwise we have got to fill them up by promotion from the air service officers themselves, General Harbord. By grading it over and carrying it over a ten-year period, as I tried to show, the age and length of service of those officers now in the Army.

Major General Harbord: You and General Facht and General Mitchell and every colonel and lieutenant colonel you have in the air service now has come from some other place. Do you think the air service has suffered thereby?

Major General Patrick: Yes, I think so, in some cases; possibly mine.

Major General Harbord: The National Defense Act permits you to take officers and try them out for a year and then return them if they do not do satisfactorily, does it not?

Major General Patrick: There is a provision, if I remember, that they can be detailed, General Harbord, and I am not sure whether it is for a year or longer.

Major General Harbord: Just why is it that you do not take some of these hand-picked people who I understand want to come in the air service?

Major General Patrick: It is particularly in the lower grades where our men suffer by reason of the slowness with which they obtained their

commissions. Now take a captain or first lieutenant of other branches; he comes in and in a year, assuming that he is capable of learning, I teach him to fly. Immediately when he is assigned to duty he takes precedence over a man who has been flying and learning this game for six or seven or eight years, and it is not fair to them. I have opposed it right straight through.

Major General Harbord: Well, you then actually are responsible for this shortage in the Air Service yourself, are you not; your action, administration action?

Major General Patrick: I am quite willing to take that responsibility for those reasons.

Major General Harbord: As long as you have these shortages the War Department for you or you for yourself are certainly not in a position to ask Congress for any increase of officers, are you?

Major General Patrick: That is a matter of opinion. I think we are.

Major General Harbord: When you have a source you might tap?

Major General Patrick: No; I say I can not tap it because I do not think the flow would be what I want.

Major General Harbord: I suppose that tied up with that is the question of these young officers who suffered by coming in at a different date from the officers who graduated?

Major General Patrick: Yes, quite so.

Major General Harbord: Do you think those men ought to be restored to their place?

Major General Patrick: Something ought to be done.

Major General Harbord: Before those men that come in by virtue of a longer period who can only come in behind men who are supposed to be quicker?

Major General Patrick: That is it.

Major General Harbord: Suppose there are quite a number of men who come in from the training schools, for instance, in France right from the trenches, do you think these boys who are a little delayed in getting their rank ought to be appointed over those men?

Major General Patrick: If you knew what some of those flying cadets over in France suffered before they got their commissions I think they are about as bad off.

Major General Harbord: Yes, that is so, but that does not answer it.

Major General Patrick: Well, I will answer it yes.

Major General Harbord: Do you think that they ought to go over those who served in the trenches?

Major General Patrick: Yes.

Major General Harbord: If you were provided the corps and the officers do you think that your officers would command by date of seniority over the other officers of the Army?

Major General Patrick: I doubt it very much. I have given some thought to that, and the question of whether these other officers would be eligible to promotion in the general rank of the army, and I think we ought to be satisfied to stay in our own boat.

Major General Harbord: Your answer in discussing the matter of defense where the air has taken command did not contemplate that they would, in the higher grades at least, command both the Army and Navy?

Major General Patrick: Not that, General Harbord. The land cannot reach out 200 miles from shore. The air can. The Navy comes in there. All that the air commander says is, "I can hit the enemy now and hit him hard. I am coming out," and with the means of communication that we have it is perfectly simple to say where and when, and we say to the Navy, "Will you play the game that way and conform your movements to ours?"

Major General Harbord: Your idea would be, I suppose, if you had a secretary of national defense, if the Secretary asked the Navy to play the game he would tell them to play it?

Major General Patrick: He would tell them to play it.

Major General Harbord: The same way with the Army?

Major General Patrick: That is quite certain.

Major General Harbord: I would anticipate that there would be a good deal of difficulty in that little transfer of command. Suppose when the Navy had been beaten back and the air came back nearer the shore and the air is then beaten back, and, as you suggested, the land may again then tell the air what to do. Suppose you happen to have some officer in command of the air with somewhat of a genius, let us say, for publicity and a corresponding lack of discipline, what do you think would be the chances of his coming under command of the land commander?

Major General Patrick: If I were Secretary of National Defense or the ground commander I think I would bring him in, General Harbord.

Major General Harbord: Is it your idea that your corps would report directly to the Secretary of War or the chief of staff?

Major General Patrick: Directly to the Secretary of War.

Major General Harbord: What is your idea of the machinery of practice which has been found necessary in all modern military organizations except yours?

Major General Patrick: I think a good many of them are unnecessary. I think again that the staff, certainly in past years, has not done what I think it should absolutely do, and that is it should confine itself to laying down policies instead of being the operating agency. I have to send every training schedule of mine to the staff to go over, and frankly, they do not know anything about it.

Representative Vinson: But you have air men on the staff?

Major General Patrick: I think I have one or two. One of them is put in G-4 where he looks after building operations on land, houses and things of that sort.

Major General Harbord: You have more as your men are able to enter the list in competition with other officers?

Major General Patrick: Yes, but the other branches will always outnumber us.

Major General Harbord: The Secretary of War, just to enumerate some of his duties briefly, has now seven combat arms to look after: He has the immediate management of the War Department, civil activities, the engineers corps, power commission, political responsibility to the War Department, the Budget to the War Department, appropriations in Congress, and some other duties to attend to. What do you think are your chances in getting very much direct attention from the Secretary of War if you were reporting to him directly?

Major General Patrick: Pretty good if he would carry out my plan, which is that the actual handling and coordination of that work would devolve upon the Assistant Secretary.

Major General Harbord: Well, the Assistant Secretary already has some duties of his own.

Major General Patrick: Oh, yes; some of them, but not as many, nearly, as the Secretary.

Major General Harbord: When you report to the Secretary of War you want to be free when you are not able to go to see him to do as you please?

Major General Patrick: No, do as he pleases.

Major General Harbord: I think you can find out what that is.

Major General Patrick: No, I think when you want to handle the air force, General Harbord, very seriously, as it ought to be handled, I think we ought to have the ability there.

Representative Vinson: You have not any brigadier generals in the corps at all now, have you?

Major General Patrick: One.

Representative Vinson: One? You have not any major generals?

Major General Patrick: One.

Representative Vinson: One brigadier general and one major general, that is all, and now you are asking for four brigadier generals?

Major General Patrick: I am. Not all at once but in increments.

Representative Vinson: When would you recommend them starting to put them in?

Major General Patrick: I want one immediately to handle my supply department.

Major General Harbord: Don't you think that the proposition to employ four-fifths of your brigadier generals in desk duty might cause a great deal of comment?

Major General Patrick: I am employing three-fifths. The supply man is the only man that is really a desk man, General Harbord, and then there would be an understudy if we should carry it out, for whoever would be chief of the corps.

Representative Vinson: How many of the 90 colonels would be on desk duty?

Major General Patrick: A very small percentage of them. The tables of organization carry nearly all of them on the field.

Representative Vinson: The bulk of the flying and the bulk of the actual flying work I judge would be done by the second lieutenants because they would be the largest number?

Major General Patrick: The captains first and then second lieutenants. They would have to have the burden of the bulk of it really.

Representative Vinson: Now you will have 2,500 planes under the Lassiter report, and under your regular list?

Major General Patrick: Yes.

Representative Vinson: And you have got 4,000 officers to command those 2,500 planes?

Major General Patrick: Yes.

Representative Vinson: Almost two officers for every plane. Now, don't you think you are loading down your airplanes a little heavy with officers?

Major General Patrick: Possibly you do not, Mr. Vinson, realize that in many of those planes there are two officers, one observer and the commander and pilot.

Representative Vinson: Yes, I was just going to ask you how many enlisted pilots you were going to have out of your 2,500 enlisted personnel?

Major General Patrick: As many as I can get.

Representative Vinson: You propose that to have a portion of these 2,500 enlisted men to be pilots?

Major General Patrick: I should be very glad to have them if they can qualify, and I am going right along, Mr. Vinson, giving this training to every enlisted man that I can get that is capable of taking it.

Representative Vinson: Your experience has been, has it not, that they make fairly good pilots?

Major General Patrick: You have expressed it just right.

Senator Bingham: General, during the latter part of the war did we not have an Assistant Secretary of War who devoted almost his entire time to the air?

Major General Patrick: Yes, sir, Mr. John D. Ryan.

Senator Bingham: Would it be in accordance with your idea that it would be an excellent solution of the difficulty to have Congress provide for another Secretary of War just as the Postmaster has a number of Assistant Postmasters General to look after things; the Second Assistant Postmaster General, for instance, has charge of the air mail—

Major General Patrick: I made that recommendation to the War Department some time ago, Senator Bingham.

Senator Bingham: Did you get any reply?

Major General Patrick: No.

Major General Harbord: Is it not a fact, General, that officers are not chosen for the General Staff merely to represent each arm but for their supposed fitness for high service? He does not represent you any more than the Quartermaster General?

Major General Patrick: Oh, yes, I think when a man goes to the staff he should not regard himself as a representative of any particular branch, General Harbord, and should deal with matters very broadly, of course. But I do think that when matters affecting a particular branch are up and there is a member of that branch on the staff who knows something about it it is well to refer them to him or in some way give him a chance to express his opinion.

Representative Vinson: What would follow, if you had an independently controlled organization, that more expenditures could be made for automobiles and motor transportation than the Quartermaster General would probably allow?

Major General Patrick: I guarantee to operate it more efficiently, and probably at less cost.

Representative Vinson: You would operate more than the Quartermaster General would permit you to have if it were under his direction?

Major General Patrick: Oh, he is perfectly willing to furnish us more, because he knows that we need more, but he hasn't any more to give us.

The Chairman: And he would have less to distribute, if you took a few more away from him.

Major General Patrick: If we took a few more away the rest of the Army would suffer, yes.

Representative Vinson: Then it gets down to the point that you want an independent motor transportation because it will give you more trucks and automobiles?

You might get in the position that we found the Navy in after the

war. We made a lump sum appropriation and we found that almost every officer was riding in a Cadillac or a Hudson automobile. So, isn't it a good thing to keep the motor transportation under the Quartermaster, General?

Major General Patrick: No, I think I would trust the Chief of the Air Corps, that I suggest, to handle the matter properly.

Representative Vinson: But the chief of that Air Corps is going to be flying up in the air and he ought not to be worried about motor transportation?

Major General Patrick: But he can look down and see who is riding, then.

Representative Vinson: What percentage of the 4,000 officers that you suggest do you think would ride in them?

Major General Patrick: I do not think there would be very many. It is not automobiles we want; it is motor trucks to serve my aeroplanes.

Representative Parker: I understood you to say this morning that Mr. Madden's scheme was something like your own?

Major General Patrick: Yes, sir. I say that Mr. Madden's ideal that he puts forward is absolutely the same as mine.

STATEMENT OF MAJ. GEN. CHARLES P. SUMMERALL, U.S.A.

The Chairman: We will be very glad to have you give in your own way any of your views on the general problem that you think might help the Board in solving the problem before us.

Major General Summerall: My views must be based upon my experience in combat, during the operation overseas, and from my experience in the three years that I commanded out in Hawaii, which was up until a year ago, where I had a considerable air force, consisting of two bombing squadrons, two pursuit squadrons, and one observation squadron, and also upon what I have seen of the Air Service in command of the 2d corps area.

Personally I came from the Artillery. I believe I know the technical work of the Artillery, but I never calculated a barrage table or oriented a battery during the war. I had a Chief of Artillery to do that for me, and I had a Chief of Air Service who assigned technically the mission of the air troops and a machine gun officer who gave the machine gun mission. Reference has been made from time to time that a person is disqualified for command of an army or unit unless he knows the technical details of that corps or unit. We do not fight battles that way. The commander does not go into detail of each arm or corps. He must know how to employ the combined arms, to assign missions for his troops, to see that his staff and services carry out his orders, and then to have his troops perform their mission in accordance with his orders.

In my experience in the peace organization and training in Hawaii, I had what is one of our considerable air forces. I had on my staff an air officer who had his section and assistants in the air service.

Our training and our plans for employment of the Air Service were exactly like our training—corresponding to our training and plans for the employment of Artillery, Infantry, or any other arm.

In time of peace our national defense system requires us to make certain preparations. There are certain isolated problems. Hawaii, for example, lies in the heart of the Pacific, with some question as to the maintenance of communication with the main land. It is essential to maintain a certain force of all arms of the service. It has been made as strong as is consistent with due consideration for every other part of our military demands. I am very partial to the Air Service. I believe in it. It can be utilized in many ways by a commander, in a way that no other arm can be utilized. For example, in Hawaii, I urged the increase of our Air Force at the expense of our Field Artillery and the War Department adhered to my recommendation and reduced the Field Artillery and increased the Air Force. It is not large enough, as the General has just remarked, for all of our purposes, but that is all we can have for the moment, and I could describe in great detail, which is unnecessary, of the mission of that Air Force. This was brought out during the Navy maneuvers in trying to take the Island, that our force was trained in the ordinary routine in accordance with schedules that I directed. As far as the reports received showed, it was very efficient.

I understand that the Hawaiian Air Force received commendation from both sides. It is the first reinforcement for bombing and machine gunning transports and troops coming in in small boats—troops landing. My idea of all combat air forces, bombing and pursuit, is to train it for combat—for aggressive action, and to release it for aggressive action. I never use the word defense.

I believe in the Air Service. Its power is extremely great. It is highly efficient today, just as it was in the war; and it is a great revelation to me to hear of these statements about inefficiency or what not of the Air Service.

I know of no defect in our present military organization of the Air Service. I can take this Air Service, and anybody else could take command of the air troops, and train it and develop it and use it in combat and they will be just as happy, just as contented, just as efficient as any other troops.

On the other hand I will say that the Infantry, the Field Artillery, and every other group is just as efficient and courageous and as loyal in the discharge of their duty as is the Air Service.

I have no partiality toward any branch of our troops. To me they are all of very high order. I know it in combat and I know it in training in peace.

That we have not all that we want is quite true. But that is an economic question. There is not the slightest doubt that if we had an air corps or a separate air corps with a separate budget that they would receive more appropriations perhaps than they would get if they are a part of the Army.

I believe the Hawaiian Coast Artillery today has reached the highest point of efficiency that has ever been known in the Coast Artillery. And that is under the organization which is today regimental. It has gone back from a corps to a regimental organization. The organization has nothing to do with it, except to get money from Congress. The men are the same; the officers are the same. And we do not change the psychology of men or soldiers by making them a corps or a regiment.

A remark was made here that a captain did not want to speak his mind in the presence of a general or a colonel, because if the colonel or the general told him to do anything that he would try to do it. That is what he ought to do. The general or the colonel is presumed to know what to do, and if he tells him what to do he should try to do it. If I may

illustrate about that, Captain Hale was the man in command of the towing squadrons in the bombing tests that we held at Fort Tilden.

Captain Hale is a good officer, and I have a great admiration for his leadership of the squadron, and he had a number of guns during these tests. It was just as great a demand as would have been made on it in time of war. He was present at every one of my conferences, and I asked him his views, and he talked to me as freely, I am sure, as he would have talked to one of his lieutenants. I do not believe an officer should be afraid of his superiors. I do not want them to be afraid of me. I courted his views in every case and in every case I adopted his recommendations.

During the Tilden experiment we found our air pilots were good for two and a half hours by day, and one and a half hours by night. Now, the idea seems to be that a man can just take the air and keep on going, and travel thousands of miles, and all sorts of things when he gets there. He cannot do that. Our records show—and I say we demanded the limit from our superb air squadron—I think it is the best squadron today—our records show that our pilots had about ten and a half hours flying per week, and about one and a half hours per week at night flying. And that was enough. And at the end of nearly six weeks, or some twelve weeks we found the intensive work of the pilots—after six weeks, we had drawn too heavily upon the pilots and their planes with that demand, and we stopped. I feel that the squadron gave us more than we should have asked of them. It was done uncomplainingly.

The anti-aircraft guns will bring down the airplane. There is no question about it, if it comes near enough to it, it will bring it down, if it explodes itself long enough, it will bring it down. You cannot tell how often you have to do it, but the anti-aircraft guns on the British front and on the French front did bring them down. And their main object was to keep the planes up at least 10,000 feet, and unless they are desperate they will not come down to those guns. They will not do it again.

We ought to have a better anti-aircraft gun, and we ought to do better shooting with it. But we are doing all we can, and I believe we will improve it. The anti-aircraft gun is essential to army bases, depots, and to protect the lines themselves, and in a defensive position, to bring down enemy planes in an attack; and also to accompany the Army to protect her air bases, which must be far in the rear of the lines, out of range of artillery fire, and for any other purpose. They have no relation to the demands for aviation.

Our Air Service must take the offensive. It must go and keep out the planes of the enemy organization. It must be released. It cannot stay around to do that work. It cannot stay around when other arms are around.

The great result to be attained by a separate aviation corps or arms is undoubtedly economic. It will get more money to get better houses to live in than the rest of the Army has, because we all know that 40 per cent of the Army is living in war time shacks. That is deplorable. And they will get more transportation, and other things. But preferment will not make a corps; emoluments will not make a corps; and houses will not make a corps.

I think it is unfair to the aviation if anybody says, or anybody spreads the idea that it is low in morale, or lacking in fighting efficiency, or incompetent from any other thing. It is not true. Any other corps of our Army would be built up in the same way if you give it the money, as the coast artillery was, for example. If you build up and give it houses—we all have to have good houses.

But I want a well balanced army of fighting men, according to their needs. And I believe the War Department is competent to determine what our army should consist of, and I believe Congress will give it all the money the country can afford to give it, and I believe our organization should be what the War Department, the responsible agency of the Government, thinks it ought to be, on its experience and its responsibility for the future protection of the country.

STATEMENT OF BRIG. GEN. HUGH A. DRUM, ASSISTANT CHIEF OF STAFF, U.S.A.

General Drum: The War Department has considered with painstaking thoroughness and care the various propositions and views presented to the Board. The main proposals have been studied in one form or another before, during and since the World War.

The salient features of these policies are based on common sense, not on sensation, on concrete conditions and not on visionary aspirations, on the combined efficiency of all national defense agencies rather than on one special agent, and, finally, on equity to all instead of favoritism to a special class.

As to the fundamental principles of War Department policies, the air power principle and its application as recently proposed by the Chief of Air Service and other air service officers is unsound from a national defense viewpoint, as well as from purely Army considerations. At the present and so far as the future of aviation can be foreseen, air power has no function independent of the Army and Navy.

While the increased military value of aviation has never been underestimated by the Army, the establishment of a separate air force independent of the Army, no matter what the form of the organization, cannot be justified on any sound grounds.

Commander Rodgers says the Navy needs naval airmen. The Army needs Army airmen. There is no place for independent airmen.

The War Department organization of its air service is the most modern and efficient in the world. It provides large tactical units, capable of performing more efficiently any and all war missions that could be undertaken by any independent air force or by any separate air corps independent of the Army.

All types of air units are essential to an army and must be an integral part thereof.

As to the administration of the air service, the War Department is responsible to the public, the commander-in-chief and Congress for the whole Army, including the air service.

The War Department has prepared the army as a whole to fulfill its national defense obligations. Its forces are balanced in accordance with specific national defense requirements. It has followed no shooting star or rainbow.

Considering the personnel and funds that have been available, the Army air service is in excellent shape.

The general staff is not a bureau of the War Department. Its personnel changes constantly. The maximum tour of any officer on the War Department general staff is limited to four years.

The general staff assists the Secretary of War by planning, advising and coordinating. It does not command or direct. It represents the whole Army and its balanced needs, and not any one special branch thereof.

While in combat the air service is an auxiliary arm the same as field artillery, cavalry, engineers and other arms, in administration, development and supply it is an independent branch of the Army. Its personnel and forces are permanent and have aviation as a vocation.

In the general administration of the Army, the War Department, pursuant to law, has placed the direct administration and control of the Air Service in the hands of the Chief of Air Service with authorities and responsibilities commensurate with this task.

Desiring a rapid and efficient development of this young arm, the Chief of Air Service has been given a freer hand in the administration of his service affairs than has the chief of any other arm.

The War Department policy is that flying units should be commanded by flying officers. Every flying unit in the air service is so commanded. The non-flying officers in the air service are on staff duty. There is no non-flying officer in the air service above the grade of captain.

The chief of air service is responsible for the training system and methods of the air service. All air service schools are under his direct command.

The chief of the Air Service has the authoritative control of and responsibility for the development, procurement and maintenance of air service equipment, as well as the expenditure of the funds therefor.

That there are so few senior officers in the air service is a direct result of the restricting policy of the chief of air service in opposing the transfer of officers of other branches of the Army to the air service.

The War Department at all times has been ready and urged such transfers. The present chief of air service and many others now in the air service were transferred thereto after long service in other branches. Many of these officers qualified as pilots after passing 40 years of age.

The air service is no worse off than the infantry, cavalry, artillery and other branches of the Army, in matters relating to promotion, housing, ration allowances and lack of funds with which to purchase material, etc.

The formation of an air corps within or without the Army would not remedy this situation, unless large additional appropriations over those now given to national defense, were to be appropriated for its use without reference to the funds now allotted to the War Department.

Every branch of the Army, not alone the air service, desires additional funds for efficient preparation for war. The War Department has been and is loyally endeavoring to execute the directions of its Commander-in-Chief, the President, in pursuance of his economy program. In doing so, the War Department has avoided adoption of general measures leading to increased expense. Any marked increase in the Air Service will involve large additional expenditures.

As to the Army's administration of the air service, in the hearings before your Board, several statements and utterances have been made by senior and junior air service officers, which are misleading and, in fact, must have given an erroneous impression. Fairness to the general public, to the Army at large and especially to its leaders, who will not appear before your Board, prompts the War Department to give actual facts covering some of the main or salient points in question.

As to the "step-child treatment," the chief of air service, General Patrick, claims that the War Department has not realized the full importance of the air arm and regards its air service as a step child. Colonel Foulou expresses the opinion that "the responsibility for the handicap, which has been placed on Army aviation can be mainly charged to the policy-forming body of the War Department, that is, the War Department General Staff."

Here are some convincing facts: The air service has been made an independent branch of the Army, coordinate with all branches thereof. Its organization is the most modern of any in the world.

The relative strength of our service has been increased approximately ten times since 1917, whereas in the same time both the cavalry and coast artillery have been decreased nearly one-half.

The air service in the United States Regular Army is given greater relative strength than in the military peace organization of any other country of military importance, except possibly Great Britain, whose geographical and political position warrants special air strength.

Notwithstanding the foregoing, the War Department policy has been and is to further increase the air service, as given you by the Lassiter Board report.

In comparison, the air service has had its appropriations increased in the last two years to a larger extent than any branch of the Army.

Air service flying officers receive approximately 50 percent more pay than officers of similar length of service and grade in other arms. A few air service officers receive approximately 75 percent more. The chief of air service is the highest paid officer in the active regular army.

These facts indicate the "Favored Son" attitude of the War Department towards its air service, rather than that of a "step-child."

As to the command of air forces, the impression is given that our air service units are not commanded by flying officers. Such inferences have a sensational ring but are not borne out by the facts.

The chief of air service commands and is directly responsible for more than 70 percent of the Air Service forces in the United States Army.

Major Kilner intimates that it took the War Department "one year and six days" to arrange for the world flight, which involved "five months and two days." He states, "We asked authority of the War Department to make the world flight, and sufficient funds to accomplish that mission on June 1, 1923. The funds were made available for use on June 7, 1924."

Of course, this statement is misleading, as evidenced by the fact that the flight started April 6, 1924, that is two months before June 7, 1924.

The records show that the flight was approved in principle within less than three weeks of the first request when the authority to send out path-finding officers to make arrangements was granted by the Secretary of War. What delays occurred were due to the necessity of extensive correspondence with foreign governments and changes of plans by the air service in working out details. Approval of the formal application was granted within less than a month of its submission, even before all necessary funds were available and several months in advance of the actual date of departure.

On the question of living conditions, Major Burwell has complained of the living conditions in the Air Service. While he states some facts, he does not give the whole picture. The Air Service is not alone in such unfortunate circumstances.

There are some forty thousand soldiers in the Army now living in war-built cantonments. Some Infantry troops are even living in tents.

A bill is before Congress asking for funds to correct these conditions. It calls for an expenditure of over \$100,000,000 to be expended over a period of from ten to fifteen years. The conditions complained of are well known, but are not peculiar to the Air Service. The War Department has done all it can, with funds available, to improve those living conditions.

An officer cannot be detailed for General Staff with troops until after graduating from the Command and General Staff School. An officer cannot be detailed for the War Department General Staff until after graduation from the Army War College, and unless he has commanded troops for two years out of six years. The foregoing are statutory requirements.

While the Air Service has 21 officers eligible for General Staff duty with troops, only seven of these are eligible for the War Department General Staff. Three are now with the War Department General Staff, and one ineligible is attached, making a total of four with the War Department General Staff. The four eligible, but not detailed, are not available, one due to lack of sufficient command duty; one is corps area service officer, 9th Corps Area; one is on the General Staff of the Panama Canal, and one, by special request of the Chief of Air Service, is on duty in his office.

I might add to that that I personally endeavored to get the officer in question. I need him seriously, and was unable to get him due to the fact that General Patrick needed him to help administer his training work. I had a similar experience in trying to prepare some work for your Board.

While considerations of the Army and Navy air programs by the Joint Board have so far been unproductive of the results desired, the War Department has not put off its study and development of the provisions of the Lassiter Board Report, which is essentially a project for the development of the Air Service.

In its Budgets for the fiscal years 1925 and 1926 the War Department has increased materially the Air Service allotments, notwithstanding urgent needs by other branches.

The Lassiter Board Report has formed the basis for all War Department studies and action in matters concerning the Air Service.

Based on the provisions of the Lassiter Board Report, and the War Department general mobilization plan, a comprehensive project setting forth the requirements (including costs) of the Air Service has been prepared.

As to the problems of rank in the Air Service: From the statements made to the Board it is evident that promotion and high rank are vital considerations in the proposals of those opposed to the existing Air Service organization.

Past experience shows conclusively that the transfer of officers from other branches is sound and will meet the present difficulties. The senior officers now in the Air Service were transferred from other arms. Many of them qualified as pilots at an advanced age.

There is no actual reason why officers of similar ages cannot be transferred and qualify as flying officers the same as practically all field officers now in the Air Service have done.

In this connection I would like to present to the Board the views of the War Department on what would occur if the Lassiter Board Report was carried through and the Air Service was given its 4,000 officers and had promotion from the bottom up without transfer of any officers from other branches of the Service.

The War Department figures differ quite radically from those given to you by General Patrick. These are the figures:

The junior colonel in the Air Service would be 46; the junior colonel in the rest of the Army would be 62.

The junior colonel in the Air Service would come into the Army in 1913; the junior colonel in the rest of the Army would have come in in 1901, twelve years before.

The junior lieutenant colonel in the Air Service would be 43; the junior lieutenant colonel in the rest of the Army would be 53.

The junior lieutenant colonel in the Air Service would have come into the Army in 1920, and the junior lieutenant colonel of the rest of the Army would have come in in 1907, or thirteen years before.

The junior major in the Air Service would be 46; the junior major in the rest of the Army would be 45.

Both of them would have come into the Service in 1920.

I would like now to turn to a consideration of the fundamental fallacy contained in the proposals of all those who desire a change in the organization of our Army Air Service.

All proposals to date can be summed up in one word—"separation."

This separation of our air forces from other national defense forces is openly proposed in order to obtain freedom from control or independent action on the field of battle. History is replete with defects and disasters attributable to no other cause. It is unthinkable to any student of military history that a nation could deliberately organize its forces on such a basis.

AIR POWER ALONE CAN NOT WIN A WAR

With the development of any new instrument of war, extreme views on the theory of war are advanced especially in peace. Based on such theories imagination coupled with self-interest dictates extraordinary views and conclusions. In many instances, during the World War and since, we find the enthusiasts of special weapons such as machine guns, gas, tanks, airplanes, long-range cannon (Paris gun), grenades, liquid fire, etc., claiming a revolution in the theory of war. These enthusiasts fail to distinguish between the theory or conduct of war and the application of new weapons to warfare.

NO SEPARATE TACTICAL OR STRATEGICAL MISSION FOR AIR POWER

Separation of military aviation from the Army and Navy, whether as a separate corps, a separate executive department or a third coordinate arm under a Department of National Defense, while an administrative expedient of questionable value, is fundamentally unsound tactically and strategically.

For this reason all "separatists" have long been seeking a distinct, sound strategical mission or responsibility which they could assign to aviation in national defense; one which could be carried out without relation to the missions and responsibilities of the Army and the Navy. Many are the indefinite missions proposed, such as "control of the air," "aerial defense," "air power," and even quite recently the principal exponent has proposed that the Air Force "be charged with the complete defense of all air areas within its radius of operations, and the aerial attack of all enemy targets on sea and land."

None of these proposals are specific, and all if analyzed can be shown

to be unsound strategically or tactically due to the lack of an independent mission or responsibility. There has not been a single advocate of a separate air arm, either before your committee or anywhere else, who has ever made an attempt to define a definite, clear-cut, separate theater of operations for that arm until the other day, when such a proposition was placed before your committee by the Chief of the Army Air Service.

The Chief of Air Service advocated discarding our present conception of national defense, which has been developed as the result of age-long experience in countless wars and substituting therefor a conception of national defense which he has evolved after a study of the Hawaiian maneuvers of last spring.

The essential element of this plan is the creation of "three theaters of action" separated by imaginary lines, in each of which one defense agency is assigned the sole responsibility for defense, together with command functions in that theater. This plan thus sets up three independent commanders, each at some period of operations being in supreme command, with two turn-overs of command during operations, with all attendant possibilities of confusion and lack of responsibility. Having recognized the difficulties now encountered in the shifting of responsibility between the Army and the Navy along the coast, the Chief of Air Service now advocates doubling these difficulties by making two shifts, first from the Navy to the Air Force, and second from the Air Force to the Army, instead of one as at present. Such a proposition violates the lessons of all war, Government, and business experience. This is changing horses in the middle of the stream.

If this conception of the Chief of Air Service is sound, why limit the thought to sea power, air power, and land power? It is as logical to claim the following:

Sea power beyond 200 miles.

Air power from 200 miles to 30 miles or 50,000 yards, limit of 16-inch gun range.

Sixteen-inch gun power from 25,000 yards to 50,000 yards off shore.

Fourteen-inch gun power from 12,000 yards to 25,000 yards off shore.

Six-inch gun power from 7,000 yards to 12,000 yards.

Seventy-five mm. gun power from 1,500 yards to 7,000 yards off shore.

M. G. gun power from 800 to 1,500 yards off shore.

Rifle power from shore to 500 yards off shore.

Man power on shore.

Then proceed to organize each of these various types of power into separate and independent forces for national defense. Imagine the result; confusion, lack of coordination, etc.

It is obvious that both air and land forces in the Chief of Air Service's scheme must operate from bases on shore, and yet with the separate responsibilities and separate command missions assigned who will coordinate the establishment and functioning of these shore bases? The air commander will be no more independent in the air than he is now. His increased independence will be only on the ground in conflict with other ground forces.

Then again we can not expect that the basis of our organization for defense must be based on coast defense. To base our system of organization in the Army on defending our coast line is entirely wrong. Americans, once they accept a state of war, they will follow their national characteristic of aggressiveness, and will force offensive action, and that means overseas campaigns.

The Chief of Air Service plans to base our National Defense system and organization on the problems of Coast Defense. In theory this may appear sound; however, when has America, or in fact any country of importance, won or lost a war based on defense at the coast line? Once Americans accept a state of war, their national characteristic aggressiveness will force offensive action, and that means overseas campaigns. Then again, if our defense based on the coast line fails, disaster may result through lack of sound organization and unity of purpose, responsibility and command on land.

The Chief of Air Service does not say whether his "air-action theater" is also to cover a 200-mile strip along our land frontiers. Such a conclusion, however, must follow the acceptance of his theories. The resulting duplication and conflict of responsibility in this "air action theater" over land is so obvious, that it is not surprising that he did not carry his conception to its logical conclusion in this respect.

It seems to the War Department that the development of aviation has really enhanced the value of sea power at the present time, and as far as one can see into the future, it does not seem to be possible for aviation to cross the seas with any strength to cause material destruction, unless the seas are under the control of the power that desires to carry aviation overseas.

It is therefore evident that if America is to carry a war on her shores her Navy must command the seas, or if an enemy is to bring the war to America her Navy must command the seas.

Let us examine for a moment the Chief of Air Service's theory from the special viewpoint of aerial defense. Due to our geographical position, it will be impossible for us to take the offensive against any enemy overseas no matter how large our Air Force, unless our sea power is able first to gain and maintain control of the sea. Conversely, in order to place the United States on the defensive it is necessary that the enemy sea power gain control of the sea in order that his air bases may be advanced overseas with protected sea communications thereto. In other words, for a country geographically located as is ours, the development of aviation has increased the importance of sea power rather than decreased it, due to the fact that if our sea power is effective it ties down the enemy's air power, preventing it from advancing against us, at the same time permitting ours to advance against them.

Assuming our fleet inferior and control of the sea lost, an enemy will attempt to advance his air bases overseas. A floating base would not afford sufficient planes and facilities for decisive results. A land base within about 200 miles of some of our various vital areas, which are extensive, must be established. The advance, to secure such a base, may be direct by sea against our own coast, or first by sea to contiguous territory and then over our land frontiers; or by a combination of both routes. In either case, land forces will be necessary to control all probable areas in which hostile air bases could be established, no matter whether these be on our coast or on that of an adjacent country.

It may be true that by establishing our air bases within 200 miles of areas available for hostile bases our air forces could delay and possibly prevent temporarily the establishment of such hostile air bases. However, such air operations would be in the nature of periodical air raids and during the intervals between raids the enemy would gain a foothold and gradually establish himself on land unless our land forces prevented. Then

again, under the cover of darkness and possibly under the protection of storms and fog surprise movements and landings might be effected.

During such operations it should be noted that the war has passed quickly from a "sea action phase" direct to a "land action phase" without passing through the Chief of Air Services theoretically independent "air action phase."

With a peace organization of our forces based on separate air and land action phases, serious difficulties are bound to arise.

Again, with our long coast and extensive frontier, surprises and feints in landings and advances must be expected. With the air forces independent of the land forces who will decide on their proper distribution and use?

Who will insure concentration of effort, etc? Who will regulate supply and coordinate the needs of the two independent forces, both based on land and generally in the same land area?

Control of land and sea essential to victory:

What separate responsibility or mission is open to air power? Armies and navies are assigned separate and distinct missions due to their ability, each in its own sphere of action, of seizing and holding strategical areas vital to the nation's welfare and a success in war. Aircraft, by their very nature, can not hold a position once taken. "Control of the air," even when gained, is essentially of a more or less temporary character. As there is air over both land and sea, "control of the air" by aircraft really means control, or partial control, of the land or sea areas beneath. Thus, it is seen that "air power," instead of having a separate responsibility of its own, is essential to and must form an integral part of land and sea power.

The Chief of Air Service's statement that "proper organization will remove the present tendency to restrict the initiative, authority and responsibilities of air commanders while they are fulfilling this distinctive mission in the air action phase," would be equally applicable to Artillery officers during the "Artillery phase" of a land action, and yet the Artillery do not demand a separate and independent command status in order to properly carry out their functions.

There is another reinforcement of this viewpoint when we know that in the last war about 70 percent—General Summerall said 60 percent; but about 70 percent—of the casualties were inflicted by Artillery fire.

Major General Harbord: Does that include machine-gun fire?

Brigadier General Drum: Yes, sir.

Major General Harbord: Machine-gun fire is not in the 70 percent?

Brigadier General Drum: No, sir; in the other 30.

The one vital principle in the defense of our frontiers, whether they are land or sea, and irrespective of the range of our weapons, whether 15 miles or 200 miles, is that all means of defense should be at the disposal of one commander.

The War Department believes that Army aircraft should be assigned all operations from land bases including the attack of enemy vessels on enemy aircraft engaged in attacks on shore establishments or operating against our coastal sea communications; and that naval aircraft should be assigned operations from mobile floating bases, either with the fleet or in convoy operations. The Navy should be definitely responsible for the creation and maintenance of our sea power for the purpose of controlling the sea, and the Army charged with the creation and maintenance of land power for the purpose of defending our territory, including sole responsibility for frontier defense (including coast defense) within the radius of action of land based weapons (including aircraft).

In conclusion, it is believed that the ideas expressed by the Chief of Air Service in his paper are fundamentally sound in—

(a) Calling attention to present duplication in the Army and Navy programs for shore based aircraft. (Recognized by the War Department and referred to repeatedly by the Secretary of War in his testimony.)

(b) Inviting attention to possible revision of our plans and policies for coast defense. (Some have been made and others are now under revision in the War Department.)

(c) Stating that the present policy for the use of Army and Navy aircraft along our coasts is not satisfactory and should be changed. (Recognized by the War Department as a temporary compromise.)

(d) In advocating a clearer definition of missions and responsibilities of the Army and the Navy, especially where they come in contact along the coast.

His ideas are fundamentally unsound:

(a) In his conception of a new national defense doctrine whereby the theater of operations along our frontier is to be divided into three "theaters of action," sea, air and land, each with a separate commander, responsible for national defense in his respective theater.

(b) In advocating a separate organization for Army aviation apart from the Army, on the grounds that our present organization "restricts the initiative, authority and responsibilities of air commanders while they are fulfilling their distinctive mission in the air action phase."

Since the passage of the National Defense Act Congress has seen fit to reduce the Regular Army at various times. The present authorized strength is 12,000 officers and 125,000 men. However, due to financial restrictions in annual appropriation bills the average strength can not exceed 12,000 officers and 118,750 men, consequently an Army of 12,000 officers and 118,750 enlisted men is endeavoring to carry out the military policy set forth in the National Defense Act for a Regular Army of 17,726 officers and 280,000 enlisted men.

Since the reduction of the Regular Army from the 280,000 authorized by the National Defense Act great difficulties have been encountered in accomplishing efficiently the Army missions. Our organizations at home are under authorized peace strength, with only 80 percent of the authorized peace officer quota. It is with difficulty that sufficient officers and men can be found to carry out efficiently the training of the National Guard and the Organized Reserves. Our overseas garrisons are below the peace strength all authorities believe necessary for security. These conditions have been recognized by the Secretary of War and General Pershing, as Chief of Staff. Both have repeatedly recommended that the minimum peace strength for the Army should be 13,000 officers and 150,000 enlisted men, instead of the present 12,000 officers and 118,750 enlisted men.

With these additional forces—that is, 1,000 officers and 31,250 enlisted men—our Air Service, and many other important difficulties, would be greatly relieved.

In discussions before the committee, proponents of a separate Air Service, or of a separate air corps, base some of their arguments on what they allege is the Air Service function and the Air Force function of military aviation. They claim that the only need ground forces have for aviation is observation, artillery fire adjustment, reconnaissance, and so

forth, and, therefore, an "Air Service" comprises only observation units. They claim that attack, bombardment and pursuit have no association with the ground battle, operate independently therefrom, even if a part of the Army, and, therefore, as the "Air Force" should be separate from the Army. Thus, these proponents present to you the confused picture of dividing military aviation into Air Service units and an Air Force.

This whole proposition is unsound from every viewpoint. It demonstrates ignorance or inexperience with the problems of war and especially with those of the battlefield.

The Lassiter Board Report provides an air organization that is sound technically, both from the standpoint of its employment in war, and for its peace-time activities and training in preparation for war. The existing organization of the Air Service is too small, and should be increased in accordance with the Lassiter Board program as rapidly as funds and personnel become available.

The War Department plan for an Army of 13,000 officers and 150,000 men, including an Air Service comprising approximately the first three increments of the Lassiter Board program, will provide many of the essential units called for by the Lassiter Board Report. It should be the first objective to be attained.

FALLACY OF A SEPARATE AIR CORPS

The history of the proposals for reorganization of the Air Service includes several propositions along the following lines:

1. A separate Department of Aeronautics under a distinct Cabinet officer.

2. A Department of National Defense, with separate sub-departments for the Army, Navy and Air.

3. An independent or united Air Service, separated in some form or other from the Army and Navy.

4. A separate budget and separate promotion list.

5. A separate air corps in the Army and Navy, corresponding to the Marine Corps idea.

In this jumble of ideas, real unity of conception and conclusion appears only in the basic desire—separation. The main objective of these "Separatists" runs through all proposals; that is, separate control, budget and promotion, or special class legislation. No government can afford to organize its defense forces with such limited special objectives in view. The incoherency involved in this jumble of separatists' ideas casts serious doubt on the value of any of these proposals.

The Chairman: General, assuming that a separate air corps functions through the general staff and the reason for having it would be the greater specialization that is necessary in that arm, something like the—

Brigadier General Drum: I understand your point, Mr. Morrow, but I believe a very thorough consideration of the Air Service organization of today in the War Department will show that it is a separate corps right today, except for promotion and a separate budget.

The Chairman: Well then, the only difference would be the name?

Brigadier General Drum: That is all, sir.

The Chairman: And the separate promotion list?

Brigadier General Drum: Yes, sir.

The Chairman: Which would be the situation that applied in the Army generally until the act of 1920?

Brigadier General Drum: Yes, sir.

The Chairman: So you would lose whatever advantages there are of lineal list?

Brigadier General Drum: Yes, sir; that and the budget which, of course, Mr. Morrow, is a very vital consideration.

The Chairman: It would not affect, though, the functioning of the Army in time of war, but might the harmony of the Army?

Brigadier General Drum: It would affect the morale greatly. Let us picture a situation with the Army such as the first army in the Meuse-Argonne battle involving a million and a half men, that of that million and a half men say thirty or forty thousand get a separate promotion from all the others.

The Chairman: Everybody gets a separate promotion in time of war, don't they?

Brigadier General Drum: They get a promotion by selection with a certain amount of seniority always considered. But here are a group of men with this million and a half that are put on by themselves under their own chief assigned to aviation, and the commander in chief who must influence the whole moral fibre of that Army has nothing to say about them. There is no question that it would have a great material effect, and I do not believe any commander in the Army would stand under it because his personality must come under it.

Representative Vinson: General, you do not need a special promotion list during war, do you, because promotions are so rapid and the only real need for a pro-separate promotion list is in peace time when they are stagnant?

Brigadier General Drum: Some thought it was rapid; others did not think so, because it was a selection.

Representative Vinson: It is a great deal more rapid in war time than it is in peace time?

Brigadier General Drum: Yes, sir; very much.

Representative Vinson: And whenever promotions are stagnant you are always in an argument for special promotion, are you not?

Brigadier General Drum: That is very natural.

Mr. Coffin: What happened as an actual fact in the matter of promotion service during the war?

Brigadier General Drum: I am not acquainted with that, Mr. Coffin, very thoroughly. I prefer you to ask General Davis about that.

Representative Vinson: Is it not a fact that the Air Service was very seriously kept back during the war so far as morale was concerned by the prejudice against the promotion of Air Service officers?

Brigadier General Drum: Not that I know of, Senator. It did not come to my attention.

Major General Harbord: Is it not a fact, General, that General Foulois, who was commissioned in the Signal Corps before the Air Service came over, senior every Brigadier General in the entire Army, every one of them, in the United States Army?

Brigadier General Drum: That is true. I know General Mitchell was Brigadier General at an age of about 37 or 38 in France.

You can readily realize, I believe, in the proposition where certain branches of the Army are to serve both the air corps and the Army that

they must serve under two heads, that they must serve two masters, with the natural difficulties of lack of coordination.

I think it must be evident that the primary thought in the organization of such an air corps is that of administration and not that of planning the conduct and preparation of war. Yet at the same time the sole and only purpose for the existence of aviation is war.

The Army is enthusiastic over the excellent performances of its Air Service. In the World War and since extreme enthusiasts as well as publicity artists have preached an air doctrine far beyond the possibilities of present or future aviation. Air power alone can not now and never will be able to win a war against a determined people.

The idea that the present or future development of aviation has or will create a third element in national defense known as air power coordinated with land and sea power is fundamentally unsound from every tactical and strategic standpoint. There is no possible separate responsibility, separate mission or separate theater of action which can be assigned to such a separate force.

The establishment of a separate air force independent of the Army can not be justified on any grounds whatever. Whether it be an air corps under the War Department apart from the Army, a separate Air Force under a new executive department, a third coordinated arm of the Department of National Defense, the idea back of all is the same and it is equally fallacious in every case. It means separation instead of union. It means divided effort instead of united effort. It means dispersion of force instead of concentration of force. It means aggravating our present difficulties instead of applying a remedy. It will mean aid and assistance for our enemies instead of their destruction and downfall. It will mean defeat in war instead of victory. The existing Army organization of its Air Service is the most modern of any in the world today.

Senator Bingham: General, you have pretty well demolished all the constructive suggestions that have been made. Have you any constructive suggestions to make for the better use of aircraft in national defense over what is now the case, or are you willing to stand pat?

Brigadier General Drum: I believe, Senator Bingham, that the organization that the War Department has prescribed for the Air Service is sound, that there is no need of change in that organization. I believe that the problem of personnel will be worked out with time. My personal view is, though, that there is a need for command, leadership in the Air Service, which will help work out that problem; that it is not a question of change of organization; it is a question of interior administration to produce the results desired.

Senator Bingham: Would you say that of the officers who actually got to the front a larger proportion of Air Service officers were killed than of any other branch except the Infantry?

Brigadier General Drum: I would not say as to killed. Our figures show as to casualties that is not so. The Infantry was very much greater.

Major General Harbord: Do you take into account the fact that there were other officers of the Army who served under the commanders in the war? For instance, a cavalryman who served at the front was killed as an infantryman under you estimate, I suppose?

Brigadier General Drum: Yes; they were infantrymen at that time.

Senator Bingham: General, you are opposed to a separate promotion list?

Brigadier General Drum: Yes, sir.

Senator Bingham: Opposed to giving them any particular advantages, and yet I presume you would not disagree with the statement of Dr. Wilmer and the other medical experts that only about one-third of such well qualified physically men as they get into West Point can become military aviators?

Brigadier General Drum: I would not say can become pilots, but can become military aviators, with all that that implies, but I think that they should have an increase in pay. Senator Bingham. That is an advantage which I think they should have. Personally, I think it ought to be the same for all grades. I think there should be an increase in pay that is coming to any man who flies. Because he is a second lieutenant he should not get any less for flying than a brigadier general gets.

Senator Bingham: You would then be in favor of giving a certain definite bonus every month to each officer who is engaged in regular frequent flying without regard to his rank?

Brigadier General Drum: Yes, sir.

Senator Bingham: Is it true that in peace time the Air Service has far greater casualties than any branch of the Service?

Brigadier General Drum: Yes, sir.

Senator Bingham: And while constituting only 7 percent of the Army it has nearly 48 percent in casualties?

Brigadier General Drum: Yes, sir.

Senator Bingham: Would not that be in a way a justification of the desire for a separate promotion list?

Brigadier General Drum: No doubt it is a justification for those who desire a separate promotion list, but looking at the Army as a whole I think it is more of a justification for an increase in pay or in insurance for the care of the family than to place a young man in a position where he must command more experienced men and may command forces of all arms. There is a factor of command and a factor of the lives of those that he commands that must be kept in mind.

Major General Harbord: The Lassiter plan provides for a proportionate share of housing, and so forth, for the Air Service, does it not?

Brigadier General Drum: The project as worked out as the result of that does; not the \$25,000,000 a year, however. That is purely for equipment and operation and not the pay of personnel or of housing.

Senator Bingham: It is probably true, is it not, that there are certain parts of our Army today, of the ground Army, such as that living in the camp at San Antonio, that are living in worse quarters than even the Air Service quarters?

Brigadier General Drum: We have at Camp Benning practically a whole regiment of Infantry which has been in tents, if my memory serves me correctly, since 1919 or 1920.

Mr. Coffin: Why has the Lassiter report been held up? There must be some responsibility somewhere.

Brigadier General Drum: As I said, Mr. Coffin, the Secretary of War has repeatedly asked for an Army strength of 13,000 officers and 150,000 men. With that strength we might carry the Lassiter board's report of the third increment of the 10 years. Secondly, the Air Service officer personnel authorization, if I remember correctly, is some three thousand more than they actually have. Now, it did not seem correct to go to Congress for more officers when we could not fill those that were authorized. For

WEDNESDAY, OCTOBER 14, 1925

STATEMENT OF REAR ADM. WILLIAM S. SIMS (RET.)

Rear Admiral Sims stated he has been President of the War College and during the war had commanded the American naval forces in European waters.

The Chairman: We would be very glad to hear from you in your own way anything that you think would contribute to the work of the board.

Rear Admiral Sims: This matter of a naval Air Force is not so much a question of what the Navy needs in the air, as what the Navy needs in the Navy Department. The Air Force is a product of the Department.

The military course must correspond to the policy it is intended to carry out. The Navy Department belittles the power of the plane. Airmen generally regard the plane as a major weapon rapidly developing in efficiency. They differ radically as to policy. One is right; the other wrong as regards the value of the new weapon.

Manifestly the policy must be established before any useful decision can be reached as to the nature and amount of the force required.

I shall, therefore, with your permission, before attempting to answer specific questions, briefly refer to this question with a view to contrasting the two opinions, and attempt to indicate the evolution of the Department's opinion and the basis on which it rests.

I shall also try to indicate a very dangerous administrative practice of the Navy Department that is carried out, both generally and in special reference to air development, in violation of a fundamental principle of command—a violation that is continuous; that is now, and long has been, very detrimental to morale and consequently to efficiency both in peace and in war. The Shenandoah disaster is a case in point.

First, as to the question of an air policy for the Navy. The basis of this question is the relative offensive and defensive properties of the battleship and the airplane. Can a battleship alone defend itself against airplanes that command the air? If so, we require a relatively small fleet Air Force.

Can a battleship alone be destroyed or disabled by airplanes that command the air? If so, our fleet Air Force must command the air or suffer defeat.

The Navy Department's air policy. It is well known that it has no definite policy, and no real air organization. The assertions of the Navy Department are briefly as follows: The battleship is the backbone of the fleet; a fleet Air Force is an auxiliary; the battleship can defend itself against airplanes; bombs can not disable a modern battleship; a fleet should be well balanced. That, of course, is a distinctly defensive policy.

The airmen assert: A fleet Air Force is not an auxiliary, but a major force; planes that command the air can sink or disable any ship; the fleet Air Force should be such as to command the air over the enemy fleet; our policy should be command of the air, not a "well balanced fleet."

A "well balanced fleet" has no definite meaning. Like all similar phrases, it is dangerous.

The airmen's policy is a distinctively aggressive one.

Manifestly, the decision as to the kind of Air Force we need depends upon the question: As to the offensive properties of the airplane and the defensive properties of the battleship.

Now, it is a question as to why the Department's policy is a defensive one. Why has it always resisted, and why does it resist the introduction of new weapons? Why has the Department failed to carry out exhaustive tests to determine the power of bombing planes against capital ships? And why was it necessary that these tests be forced by the Army?

Evidently this indicates a state of mind that so profoundly influences our present lack of definite air policy, that its causes should be sought; because so long as it is maintained no adequate progress is probable.

Unfortunately, this is a matter that does not admit of very definite explanation.

It is due to a kind of conservatism so very extraordinary that it would be quite impossible of belief were it not for historical evidence that establishes it.

I do not need to say, of course, to a board like this that all fundamentally new weapons, without any exception whatever, have been resisted by military authorities down through the ages.

But there was a more serious opposition still, and it comes very close to this question of an Air Force, and that is the continuous opposition that has gone on for the last 25 or 30 years against the training that is provided by the Naval War College in Newport. Successive Secretaries of the Navy have given lip service to the War College, but they have never adopted its product.

Now, the result has been very detrimental to the Navy, is detrimental now with reference to this Air Force. For many years the Navy has been controlled by uneducated and untrained officers—untrained in a military sense—who have been appointed to the most important positions. The same class of officers now hold these positions, and that is at the root of our present troubles—and of the present low morale, due to lack of confidence in the leaders. This lack of trained leaders explains why the Department is administering the Navy in violation of military principles—particularly in violation of the fundamental principle of command.

Now, the Shenandoah's case in point, and only as an example. We will presume that the commander of the Shenandoah and his technical assistants were the best men that the Navy had to put into that important and dangerous job. If they were not so, it would be a criminal act to put those men there. Assuming that they are the best men in the Navy, we have concentrated at Lakehurst the best information on the subject, and the best technical talent the Navy affords. This being assumed, it is a violation of the very first principle of administrative command to try to manage a great affair like that from the Navy Department by men who technically, according to the assumption, are not as competent as the men on the spot.

Now, that Shenandoah business is a symbol of the continuous violation of this age-old principle that is destroying morale and blighting the initiative of subordinates. It is unreasonable, unscientific and unmilitary administration. Such methods applied by the high officials of a great railroad would wreck its equipment.

The consequence of this lack of intelligent public interest is that national and service politics determine appointments to the highest positions in the Navy. That has been the case nearly always, particularly during the service of the last three Secretaries of the Navy.

The result of that, in the case of the conduct of the Navy Department

thermore, the general question of increasing in the Army, by 1,000 officers and some 30,000 enlisted men, has been repeatedly recommended by the Secretary. It did not seem, from a personal viewpoint, certainly, proper to go forward with a project that was over that strength.

STATEMENT OF BRIG. GEN. FRANK PARKER, U.S.A.

Brigadier General Parker: I speak from the standpoint of a combat officer. I think I should like to preface my remarks by expressing a certain surprise which I have felt at the claims of aviation since the war, as compared with what they really accomplished at the end of the war. I think if we begin the next war with an ability in the air corresponding to the ability that we had at the end of 1918 that we would do extremely well.

I was on the front in command of a regiment, a brigade and division of our own troops, each of which had the longest combat service and the heaviest losses, and at no time did any airplane ever attack our Infantry on the ground. At no time did I ever see any airplane attack any Infantry on the ground. I at no time saw more than two or three planes engage in combat in the air over my head.

I was an observer practically throughout that war with the French Army, and then I observed while I was fighting with my own command, of course. There is no one that has a higher appreciation of the utility of the Air Service than have I; there is no one regards it as more necessary to the combat team than do I; but I see it always as a member of the combat team of fire, and only as such in a useful capacity up to the present. What the future will develop we will have to wait and see.

I say that we have certain branches that make our combat team the greatest team in the world and which, when they are homogeneously developed, carry forward the cutting edge of the tool. It is very simple. We have the Infantry, the Artillery and the Cavalry, and now we have the fourth—aviation. The tanks are integrally a part of our Infantry. I think we should only speak of those four—the Infantry, Artillery, Cavalry and Aviation. They are just alike; they are all branches; they should be organized as far as possible alike, they should be administered alike as far as possible, and they should be treated just alike.

As to the extra pay of the aviator, there isn't a man today in the Army that I know of that is not glad to see him get that extra pay. We would like to see him heavily insured, likewise.

Air today is a branch of our Army, like the Cavalry, the Infantry, the Artillery. It is a part of a great combat team and should be organized and handled as such. I think that any other procedure with reference to air today would be a great mistake in the present situation, under existing conditions.

STATEMENT OF MAJ. GEN. HANSON G. ELY

Major General Ely: As stated, General Summerall's battle experience, and General Parker's, were all as mine have been, and I have personal acquaintance with practically every general officer who commanded, from an army down to a division, in the war, and they are the opinions of those general officers, and I have never heard different opinions expressed by any officer who commanded mixed troops in battle nor any general officer of a foreign nation who had experience themselves along those lines. As far as unity of command teamwork is concerned, it is extremely important that every part of the unit be under the entire control of the commander in chief in the field—a large corps, perhaps, segregated as G. H. Q., perhaps, but always to be used by him for his purpose, but not for the purpose of some man to do as he pleases with.

Since the war, in the last four or four and a half years, the commander of the General Service School, Leavenworth, and the War College, our principal duties at those schools is to teach the effect of combined teamwork of different arms of the Service.

While I have not served on the General Staff, I know that the General Staff today is the best General Staff it has ever had. We learned during the war. Before the war we had little idea of General Staff work. We learned from the French, from the English, from our own schools, and so forth.

The General Staff do not look at things from a prejudiced light. They look at things from a very broad viewpoint for the benefit of the entire country. They have the confidence, I believe, and I know they have the confidence of all the general officers, the combat officers, corps area commanders, and I know that these officers have confidence in the General Staff.

Our little Army aviation can never be of any great moment in war. They will be only a small nucleus. They must depend on commercial aviation, and they must be assisted. And I think the country is ready to assist it. I think the Congress is ready to assist it, as for commercial navigation, to assist it reasonably. I think soon we would have plenty of planes and plenty of pilots.

The Air Service, by its nature, has been separated and is separated, on account of the landing fields, and the airdromes, and so forth, from the rest of the Army. It has been separated and given too much.

I believe in aviation, and I want to see it increased. But I do not believe in a separate branch for it, and I do not believe in a branch that hangs off and casts aspersions on the other branches of the service, other branches of the service that are just as necessary as they are.

There are limitations in the Air Service. We put our men up. Many more wanted to come, but we couldn't take them. It is erroneous to say that the General Staff officers do not want to fly. Many of them want to fly. It is a question of getting the money. They do excellent work.

If there is a separate appropriation for the Air Service it should not be to the detriment of other services. The other services are pared to the bone. They are in very bad condition, as a matter of fact. But the Army is a well disciplined body of men, and the President of the United States says this is the Budget; you have got to have tax reduction. Our insurance against war is a matter for the determination of Congress and the President, and we will have \$257,000,000 for the Army; the Army takes that money and does the best it can with it, finds no fault and asks no questions.

under Secretary Daniels, was shown in the report of a special committee of the Senate that reported on the war and showed the sacrifices that were caused by this same violation of the principles of command.

When Secretary Daniels came into office and attempt was made to bring him to an understanding of the supreme importance of employing men who had been trained for high positions. He gave lip service, as usual, to the War College, but could not be induced to visit it. He appointed to the command of the fleet, being the position of Chief of Naval Operations, and to the superintendency of the Naval Academy, three uneducated and untrained men—uneducated and untrained in a military sense.

In a deliberate interview that I gave out in the Boston Transcript, I characterized this as a crime against the people of the United States.

Secretary Wilbur came into office, and the same policy has been maintained. It has just been announced that another man of that class has been appointed to the command of our great fleet, and that is a risk that the people of the United States should not be called upon to sustain in case we get into war.

Now, ever since Mr. Daniels was in office what is popularly called the "Daniels Cabinet" has been in the saddle. These men are earnest and honest and hard working and able men, always exceedingly busy directing as many details as can be crowded into the working day. Their idea seems to be that as the Department necessarily has supreme authority over all operations, it should therefore exercise this authority in deciding a mass of even highly technical matters in disregard of experts in charge on the spot, as in the case of the Shenandoah. This is done in the ignorant conviction of duty faithfully performed.

Manifestly the development of an efficient Air Force is impossible under such influences. If there are those who think that I exaggerate the danger of this false training in time of peace, due to the violation of the military principles indicated, I would respectfully invite attention to the case of dangerously great losses caused thereby in actual war, during the Great War.

As long as we maintain the present system and this particularly dangerous violation of principles of command, and train our people in time of peace that sort of thing must inevitably happen in case of war. It cost us for the delay (introduction of the convoy system) at the rate of 5,000 men a day, and it is estimated that it cost us two and a half million tons of shipping for failing to put the convoy system into effect, due to the resistance of our Navy Department.

Now, such remarks as I may have to make as to the nature and extent of the Air Force required by the Navy will be based upon the assumption that the airplane is now a major force, and is becoming daily more efficient and its weapons more deadly.

That a battleship can not protect itself against the attack of bombing planes by anti-aircraft guns alone;

That even the present type of bombs can destroy or disable any vessel;

That, therefore, even a small, high speed carrier alone can destroy or disable a battleship alone;

That a fleet whose carriers give it command of the air over the enemy fleet can defeat the latter;

That the fast carrier is the capital ship of the future.

Based upon these assumptions, it is evident that our policy in respect to the Navy Air Force should be command of the air over the fleet of any possible enemy.

Concerning the kind of an air force that would be most efficient in operation with the fleet, it should be one that belongs to, lives with and continually trains with the fleet; and it should be trained in peace and be controlled in action—that is, in battle—by officers thoroughly indoctrinated in the tactics and strategy of the fleet, as developed by the commander in chief. A separate Air Force would, therefore, be impracticable.

I may say in illustration that were I in command of the North Atlantic Fleet in case of war and there were assigned to me 200 or 300 planes from a separate air force, I would not be able to make any proper use of them; I could not coordinate their actions with that of the fleet.

I can imagine no more inspiring duty than to be given charge of a large Air Force to belong to the North Atlantic Fleet. To put that Air Force in condition to be able to do what the commander in chief will order it to do should be done in a very brief order. I do not know how it is done now. The airmen do not know it is done. But he may go through the same process for a year or eighteen months by putting it on a game board, by trying it out in the fleet, by recognizing their mistakes by putting it on there again, and I have perfect confidence that at the end of eighteen months or two years he would bring about a course of education by this very simple means. He could give a very short order, or the commander in chief could give a very short order, and the attack could be carried out in the way he intended.

That can not be done by anything except, as I said before, educated naval officers.

Now, another point I want to make, and very specifically, is this, that in order to indoctrinate a course with the Air Force it is not necessary at all that the man who does that must be an airman.

It is not necessary for a man who indoctrinates the course to know more than the capabilities of the vessels that he is to handle.

The principal idea is this, that the indoctrination is carried out by the conference of all of the people concerned, and when you have finally established your doctrine it is not the doctrine that you impress upon them; it is the doctrine they have worked out themselves in conjunction with you. If our Air Forces in the future are to be efficient when they come to cooperate in war or in training for peace with the commander in chief, they must be controlled by men who are thoroughly educated naval officers.

These young men deserve all of the praise that they get and some of what they give themselves, but they are mistaken in assuming that as members of a separate Air Force or as members of a separate corps in the Navy they can acquire either the nautical, tactical or strategic knowledge of the line officer or the training necessary to apply that knowledge in handling a fleet air force in efficient, tactical and strategical cooperation with the plans of the commander in chief.

The man who commands the fleet Air Force in war operation should be thoroughly educated and indoctrinated.

While it does not particularly concern this question, there is something that I should like to say in reference to the accidents that have afflicted the Navy recently in these disasters in the air and elsewhere which have brought down upon the Navy considerable public criticism.

Some of these criticisms have been due to a misunderstanding of the Navy's obligatory attitude in respect to safety.

We can make the Navy perfectly safe if that is what you want. We can fire turret guns for a hundred years without ever having an accident if you let us take all the time we want, but if you go into action with turrets like that you will get licked inevitably.

But the risk that you would have to take in war you have got to take in time of peace in order to prepare for war.

Just another remark that I would like to make, and that is of the great danger in a question of this kind of the influence that public opinion may have upon a decision. I do not mean a decision of the board, but I mean a decision of Congress afterwards.

Here a little while ago the American Legion passed resolutions in favor of a separate Air Force. I can not imagine anything more unwise or more unpatriotic, although I have not the slightest doubt that those people intended to be patriotic. The idea of using the influence of a great organization in order to put through a certain measure is determining our national defenses by popular opinion of people who are not informed, and it is extremely dangerous.

The Chairman: On the point you touched on last we have had some rather conflicting opinions, about the value of using the Army or Navy planes in racing. Mr. Orville Wright told us a day or two ago that he thought the use of Army and Navy planes for what might be called exhibition purposes, such as racing, was in his opinion very valuable in the development of the art.

Rear Admiral Sims: Anything that is necessary to do in order to develop a quality in a military weapon that the enemy may develop if you do not, any risk that must be taken in order to develop that quality should be taken in time of peace and the people should understand what we mean about it.

Senator Bingham: Is not the same educational system followed in the Navy as in the Army with regard to officers on the General Board?

Rear Admiral Sims: Absolutely not. The Army system is vastly superior, and it is perfectly logical and could be adopted by the Navy. We have made the effort repeatedly in the last 15 years. Now I know that a good many think that if you want to have an efficient commander in chief in time of war you want to learn your business in the fleet. I give you my word that it is absolutely unnecessary. There has never been a maneuver carried out with the North Atlantic Fleet, nor can there be, within the limits of any decent appropriations, of the kind that we have been carrying out on the game board in order to train the minds of the men so that they will be ready. I want to accentuate the idea of the word "training."

Now the idea of the training of the mind in the War College is this: I have been at the War College altogether, as a student and as President of the War College, some four years, and it is singular to watch the evolution of an officer that comes there, an excellent man, perhaps, a commander or a captain, who has never given any particular attention himself to the question of tactics and strategy; for, mind you, there is no place in the whole naval organization where a man is taught that thing except the War College. The Naval Academy is purely elementary. To see a man come there, and as far as learning the principles of tactics that are taught there and the principles of strategy, which is a more or less simple matter, to see him put in contest on the game board with other men, the slowness of making decisions is the principal characteristic.

The one thing they do impress upon them at the War College is this great modern principle of the dependence upon these subordinates, of taking away of all the details of this organization, of telling a man what you want done, but for God's sake, without telling him how it is to be done. Any man who handles a big weapon, plane or anything else, knows the system perfectly, but we do not carry it out in the Navy. There is where the trouble is now and has been for years and years, right there in the Navy Department. If they will only enunciate or announce the policy as they do in the Army, they will not appoint to the most important positions in the Navy officers who have never been through there.

Now, as Admiral Luce says and Admiral Mahan says, the great value of the War College is that it not only trains these officers, but it points out to them the efficient men who are the men, the educated men, who ought to be selected for these important positions.

The Chairman: I was going to ask you, Admiral, if you are familiar with the practice of the British Navy as to the use of a War College or something akin to it for the training of high command?

Rear Admiral Sims: They have a War College over there, it is true, and their men are selected in accordance with the general belief in the Navy as to education for the job. We are not stupid on this side at all; we are just a little bit indifferent because we are so far removed from the possibilities of war that we do not think about those things.

It is quite impossible in the British Navy for a man to be appointed as First Lord of the Admiralty or in command of a fleet who is not at least believed by the fleet to be a very, very excellent man, and we have had cases here of men appointed to the very most important positions of the whole Navy who were entirely inefficient, men that had never looked inside of a book in their lives, and all that sort of thing. Well, I say we are getting tired of it. You could do more for the Navy now than anything I can think of, in the air or any place else, if you can bring about the announcement of a policy that the educated officers of the Navy should be the ones to put in those high positions.

I do not think the British War College is anything like as efficient as ours. The reason our War College is efficient is because through the influence of the men who started in the work twelve or thirteen or fourteen years ago we put it on an applicatory system.

Now I do not think that they do that in the British War College. But the point I wish to make is that the efficiency of the British Navy is so absolutely an essential to the integrity of the British Empire that public opinion would not for a minute permit a man to be put in there that the Navy and the public did not believe is the right man.

Senator Bingham: Do you think the Army specialization system has any merit?

Rear Admiral Sims: I think it has merit, and I think it is a proper system for the Army. But it is different with the people of the Navy. As I said before, an Air Force operating with the Navy which is not nautical, which does not understand the handling of ships, the strategy of ships and so forth, would be of almost no use. On land it is a different matter. It doesn't take very long, with intensified training, to make a good soldier;

but it is a question of fifteen or twenty years to make a man of any use at sea.

What I said before about having an Air Force in the Navy commanded by thoroughly educated naval officers, has particular reference to the command of those forces after they have been instituted and are with the fleet, in order that they may coordinate with the fleet. Manifestly if the Navy has a primary school where airmen are to be taught all there is to know about planes and about the handling of them, it seems to me only natural and normal that that school should be under the command of somebody who knows something about the job.

Senator Bingham: Why is it that the Navy seems to feel that a man must be a captain or a commander before he can command?

Rear Admiral Sims: You can search me. I don't know. If you look into it you will find that there is no real organization of an air force in the Navy Department. The whole business is higgledy-piggledy and it wants to be straightened out. How that should be done I don't know. I am only interested in making it clear, from my own military experience, that the Navy's Air Force must belong to the Navy, be trained with the Navy and be a part of it, under the Commander-in-Chief, so that it will coordinate with his tactics and strategy.

Senator Bingham: You do not agree with Col. Mitchell's idea with regard to aviation?

Rear Admiral Sims: No, sir, for the reason that I have given before. I have great respect for Mitchell. He is a bully good fellow. He has done an inestimable service in bringing this thing to the attention of the people, particularly in bringing it before an impartial board like this. We are tired to death of Congressional investigations. I have been before a number of them, and it seems that they try to confuse the witness, to hang him up; it is perfectly apparent that they have got something to prove before they start the investigation. The Navy welcomes very cordially the appointment of a Board like this and looks forward hopefully to what it will decide.

Mr. Coffin: Your illustration of a destroyer movement, which was most interesting, would seem to indicate that you think there should be an air tactics school developed, as applying to the handling of aircraft, possibly independent of the actual movement of the ships?

Rear Admiral Sims: There are air tactics and also destroyer tactics. Destroyer tactics are different from that of battleship tactics because they are easier to handle, they have more speed, and all that sort of thing. When the destroyers are sent out on any expedition or to make an attack under various conditions, they are handled by what is known as destroyer tactics. An airplane in the air must be the same thing, or otherwise they would be continually bumping into each other and there would be trouble all the time.

The tactics I referred to were not the relatively limited and intimate tactics of the plane in handling itself in the air; it was the tactics of handling the entire force with the fleet and using it in an attack in whatever way the Commander-in-Chief wanted. That kind of tactics is another matter altogether. The intimate tactics must be developed by the man in the air.

If I, who know nothing about airplanes, should be placed in command of the North Atlantic Fleet, in sending out airplanes to reconnoiter the enemy fleet and so forth, either as a passenger or as a pilot, there must be a man in those planes that knows the business all the way down to the ground, because the situation might arise as arose in the battle of Jutland, where, for a long time, Admiral Jellicoe was in extreme doubt as to the formation and position of the enemy fleet. Then when he saw the silhouettes of vessels through the smoke he did not know at first whether they were Beatties' vessels or enemy vessels. Now if he could have sent an airplane out there with a man from his own staff, a man conversant with his own tactics, as soon as he got his eye on them and saw the formation he could have sent a brief signal back to Admiral Jellicoe which would have told him from which end to deploy. If you send a man out there, I don't care if he has had 18 years' experience and is the best airman, or the best Mitchell the war ever produced, unless he knows, as soon as he sees the fleet, what the formation means in reference to maneuvering to meet the situation, it would be useless and dangerous. That is the reason that an Air Force which belongs to the fleet has got to be handled in its major tactics by a line officer. But as to the other tactics of handling itself in the air and all that sort of thing, that belongs to the airman, because he understands how to handle the plane. At the same time the man who has to handle the grand tactics wants to know about the capability of those vessels, in accordance with the information he gets from them and determine in what way they can be most efficiently used without too much loss to themselves, of course.

Antiaircraft guns are psychological weapons. I have asked Army officers repeatedly if they could say what the result of antiaircraft fire on the western front actually was, and I do not think any of them quite told me the truth. I could see that they were embarrassed a little and would say that for every 1,000 or 1,200 shots a hit was made.

It is the same thing as shooting at a bird who is flying across your sight. You do not shoot at the bird, because it will be gone by the time the shot gets there. You have got to shoot ahead of the bird in order to hit him. Now those implements that they used on the western front to determine the position of an airplane could not be used on a battleship at all, because the ship is moving; they could not be used in any way at all. Not so long ago the whole subject was mathematically considered by a mathematician in the Bureau of Ordnance and he wound up by saying that the percentage of hits must necessarily, mathematically, be negligible. The difficulty about the whole business is that they haven't got the guidance in the air that we have on the water.

Our antiaircraft guns can never be of any particular use in keeping off planes. I cannot imagine any real airplane pilot, in case of war, who is going to give a darn whether he gets hit or not. He is going to get in and bomb the ship. As a matter of fact any wise commander that wants to attack a battleship will wait until the sun goes down, when his plane becomes practically invisible and the ship is perfectly visible, particularly because it is moving.

Smoke always makes a better condition for the airplane. It cannot be seen so easily, but you can hardly imagine the smoke being so continuous that you could not see some part of a battleship 700 or 800 feet long, or at least some part of a mast or something. The more smoke there is the better it is for the airplane. I regard the airplane still as something of a boy. It was an infant during the war. It has developed amazingly since.

What we people that believe in airplanes want is a definite policy an-

nounced that we are going to get command of the air, because I do not see any possibility of overcoming an enemy if the enemy gets complete control of the air over a fleet, by wiping out our own air force, before a gun is fired.

When the first bombing experiment took place out there, an officer on the staff of one of the Admirals said, when it looked as if they might be interrupted by the weather, "If that storm doesn't come up and blow these dam planes away the Navy will be ruined." That seemed to be the feeling against it. There has been opposition all the time to these experiments. We do not know anything about the experiments against the Washington.

Mr. Coffin: Do you think that properly organized experiments should be continued in connection with the use of aircraft against vessels?

Rear Admiral Sims: It is certainly the business of the Military Department to find out which of his weapons is the most dangerous and not try to suppress any one of them. Even if at the expense of a good battleship I would find out all that these bombs would do to the battleship, bombs weighing 2,000, 3,000 or 4,000 pounds, or whatever they are.

Senator Bingham: The Secretary of the Navy told us in his testimony before the Board, quoting, "My idea is that there is no such thing as control of the air as long as the enemy has one plane."

Rear Admiral Sims: I wonder who told him that. I don't think I would worry very much if I were in command of the fleet and had driven down all of the enemy's planes but one. There would be no trouble about driving it down. The remark of the Secretary, although he does not suspect it, does not mean anything at all really.

STATEMENT OF REAR ADM. A. E. COONTZ, RETIRED OCTOBER 3 FROM COMMAND OF THE U. S. FLEET

Rear Admiral Coontz: The United States Fleet is composed of five branches, five forces—battleships, cruisers, destroyers, submarines and airplanes. For quite a time past we have endeavored to get aviation in the fleet. Since the limitation of armaments we know exactly, practically at least, what our limitation is as regarding the air. One idea I would like to bring before you is that there is a limit to airplane carriers under the 5-5-3 treaty; and if we fill up our part and put such airplanes as are possible on other vessels of the fleet, no nation at sea can be better off than we are in the air.

We have recommended within the past year three airplanes on a battleship. As we will have after modernization 18 vessels we will then have 54 planes on the ships alone.

I might state that the limits of the Lexington and the Saratoga as at present constituted are only 72 planes. So that you will see for a far-off sea fight as we come along the number of planes is limited.

One of the recommendations I will make will be to get up to our treaty limit in airplane carriers, provide the planes therefor just as quickly as we can, and be in shape. It will take a moderate amount of money for the planes, and of course it will take a considerable amount of money for the other three carriers.

We had a number of evolutions of problems last year. We have had them at Panama; we have had them at Hawaii; we have had them out in the open sea. We have tried to try out what planes are good for, how they work with the fleet, and everything else in that connection.

An Air Force will probably be always expended, or partly, at least, early in any fight. They are bound to be almost the first attack makers. We expect them, as they are brave men, to take chances, even if they are inferior, that something will happen to the opposing air force. And as Admiral Sims says, if it gets down to one or two or a few planes after all that is done, we would not have any fear about bringing the other people down.

We are trying to improve the air force all the time. Last year in the Caribbean I got up six planes when the battle opened. And I had the pleasure a few months ago, while standing on the bridge of the California, to see 48 planes up in the air.

The Air Service is going into the fleet all the time. They are educating aviators at Pensacola, at San Diego, and they actually are coming aboard the ships right along.

And month after month we are getting the catapults, getting them more and more in the fleet, where they belong.

And these are the principal things that we need as far as the Navy is concerned, these extra carriers, and these airplanes to go on the carriers, and on the battleships and on the cruisers.

We have had wonderful success trying them out, particularly on the way to Australia. We had one plane to go down in Melbourne, but we have already got it back to the United States, and we did not lose a man.

Those people who are asking for a separate corps will be coming on up, and they are going to know that job just as well as ordnance, submarines, and everything else is known. They will be a part and parcel of the Navy.

And now here is the radio. These things come, one on top another, so fast that it is pretty hard to keep up with them and keep their proper perspective. But by the use of the radio sometimes in a few seconds we will get a report as to the results of scouting, and what the situation is, and what to expect, what they found. It is now a living and breathing part of the fleet.

Of course, we never get as large appropriations as we would like to have. At the same time the Navy Department backs us up every time when we think we have something. I have not had them to interfere with me hardly in the slightest degree in the past two years. As Admiral Sims says, we trust these people who have had practical experience to tell us what it is all about, and then we see it with our own eyes.

Do not forget that one point, that when we fill ourselves up no fellow out on the sea can have more, and only one fellow, Great Britain, can have as many planes out there fighting as we have. I believe that point has not been thought of, what limitation of armaments means as regards the restriction of number of airplane carriers.

The Chairman: Admiral, do you think that there is opportunity for a man to go into aviation today in the Navy, and specialize in that subject, and still get a Navy education in seamanship and have a legitimate ambition to some day command the fleet?

Rear Admiral Coontz: I do, sir. I have seen in the last forty-five years all of these things, like electricity, and ordnance and radio and gunnery, every one of them come along, one by one. And what has been done? They have been mastered; they have been mastered by the ordinary officer and up he goes. And to add one more is nothing.

The Chairman: Do you consider that aviation is any more a specialty than the other branches of the Service that have come into the Navy during your lifetime?

Rear Admiral Coontz: After a little time I do not believe that aviation

will be any more a specialty than these other branches that were new at one time. I believe that everybody after a time will know pretty nearly as much about airplanes as is now known about automobiles.

Senator Bingham: Do you agree with the statement of flight surgeons that only a small percentage of naval officers can become naval aviators?

Rear Admiral Coontz: My own experience is that of the officers who have gone from the fleet, passed the examinations and come back, that they apparently have been few in number, that the most of them have gone ahead, and others that finally could not do it have been sent back to the fleet.

Judge Denison: Do you think there is opportunity for a naval officer to continue in aviation as a specialty and give substantial attention to it and still get along in progress towards the line?

Rear Admiral Coontz: I have always believed that when a question like that comes up it will be handled successfully.

I regard the matter of promotion, and so on, as about the easiest thing to handle, and the same way as to flight pay, and all that goes with it. It is being agitated, in my judgment, a little ahead of time, before it comes up to a serious question, but I believe that would be the recommendation I should make to your Board—to see that it was handled either by the Navy Department or by the Congress.

The Chairman: Admiral, have you formulated your ideas as to what few strokes of the pen should be used?

Rear Admiral Coontz: I will see if I can find them here among my papers.

Memorandum covering examination of line officers, section 1496. Mental, moral, and professional examination: No line officer below the grade of commodore, and no officer of the line shall be promoted to higher grade on the active list of the Navy until his mental, moral and professional fitness to perform all his duties at sea have been established to the satisfaction of a board of examining officers appointed by the President.

That is the Act of 1864. After that I would add these words:

Except that the professional fitness for the promotion of an officer assigned to duty in aviation may be restricted to his professional fitness in aviation and in such other general subjects as the Secretary of the Navy may prescribe.

Rear Admiral Fletcher: Have you conducted any exercises in the fleet in regard to antiaircraft defense?

Rear Admiral Coontz: In all the antiaircraft practices that I have witnessed, particularly when they towed the sleeve, and when as now the bombs broke or had a tracer, I have always been glad that I was not on the sleeve. And the percentage of hits was greater than I originally expected, but I take it that the records are before you, possibly 25 percent.

I want to say about this matter of bombing, and particularly bombing of battleships: If you tie a poor old dog over there in the corner of the room and throw rocks at him you will eventually kill him. But if he is left free he will jog around pretty lively. At sea you will find there is something of that sort, as you know you did when you used to try to miss submarines, you jiggled a little. There is only one place up in the air where a plane can be when it drops a bomb if it is going to hit you.

Now, I do not pretend to say but what we are going to get more and more accurate in dropping bombs. At the same time, we are going to get more and more accurate in the matter of dodging them. And we are going to get more and more accurate in our antiaircraft fire; because in these things, as in everything else, we are making progress every time we hold one of the affairs. And the antidote has always come forward as against the disease.

Mr. Coffin: You witnessed the bombing experiments in 1921, I believe, did you not?

Rear Admiral Coontz: I regard them as absolutely inconclusive. I will be perfectly frank and say to you that I do not think it possible to get anything out of them. You cannot leave human beings on board the ships under those circumstances, and you cannot simulate the real battle conditions that exist when a fight comes on. You have a one-sided affair. I believe in stunts, so-called, that are of distinct advantage, but beyond that I would put the money in the legitimate lines of endeavor.

STATEMENT OF REAR ADMIRAL DAVID W. TAYLOR, CONSTRUCTION CORPS, U.S.N., RETIRED

The Chairman: In the course of your duties you have had a great deal to do with studying the development of the airplane?

Rear Admiral Taylor: From 1915 until 1921, when the Bureau of Aeronautics was established, the Bureau of Construction and Repair was responsible for the design and construction of all naval aircraft. It seems to me as regards naval aviation at present, that it is suffering from the condition which applies to all line specialists in the Navy; that under the present law promotion in the Navy to the ranks of commander, captain, and rear admiral, is by selection.

Now, when an officer gets up to lieutenant commander and is looking forward to promotion to the higher ranks of command, there is just exactly one basic quality upon which he should be, for the benefit of the Navy, selected; and that is ability to command. Now, the specialists may or may not have the ability to command.

The result is that these specialists who have spent years in this branch of the work are naturally somewhat discouraged when they get up to the point where their especial knowledge is of little value.

Now, since we have promotion by selection, I do not see how you can expect promotion to be based upon special knowledge, or anything else except the essential factor which I have put into three words as "ability to command." And I believe that is the principal difficulty with the naval aviators today.

Now, that difficulty is already in process of removal. We have had naval aviators—very few of them—who have spent a comparatively long period in aviation. Under the recent action of the Navy Department in introducing aviation at the Naval Academy and taking steps so that every officer who is capable of becoming an aviator becomes an aviator, and those who are not capable physically of becoming an aviator still acquire knowledge of aviation, it will cease to be a comparatively narrow specialty, and the people coming on will have no ground for complaint.

I think as regards the people who are now in, that they should be treated with the utmost consideration. I would like to point out that at present I believe the material of naval aeronautics is fairly satisfactory.

Now, you will run into one difficulty when you increase knowledge of aviation in the Navy so much that the average naval officer does not spend a large number of years in it, in that these line specialists will not have the opportunity to practice their specialty as they should. I believe

when it comes to material it is almost necessary that men who are specially qualified for dealing with material matters should make it their life work. Certainly the upper men, the senior men.

Mr. Durand: What is the best method of dealing with this matter of taking care of those people who deal with material matters, and the line officers?

Rear Admiral Taylor: Temporary detail in the lower grades, and permanent segregation in the upper grades.

And in line with that I was suggesting that these present line specialists who deal with aviation should be permanently segregated, just as the engineers are now segregated.

My idea is that it should be ultimately a single body made as small as possible. But I am afraid there would be a constant friction, and what I am suggesting now is what was established when dealing with the same problem in connection with engineering in the Navy.

Mr. Durand: What rewards would you place before the eyes of the people in these corps or specialties?

Rear Admiral Taylor: You would have to provide that they would be entitled to a certain amount of promotion. But that is a matter which could only be developed by experience. And I think it would be necessary to provide that these segregated people, these specialists should be given duty and position commensurate with their ability.

Mr. Durand: You had experience with the procurement of material in the war. Was there coordination, or competition between the War and Navy Departments in the procurement of material?

Rear Admiral Taylor: There was no competition, as I recall, of any kind, and absolute cooperation.

Mr. Durand: What do you think of the desirability of a single procurement agency for aircraft?

Rear Admiral Taylor: I have never been able to see the advantage of that for a very important and practical reason. The people who procure aircraft have got to procure aircraft to suit the people who fly them. The result of a central procurement agency for aircraft would be either that it was simply a rubber stamp body, in which case it would be a work of supererogation, or it would interfere with the demands of the people who use the aircraft.

Mr. Durand: As to the qualities of the aircraft and their performance in attacking battleships?

Rear Admiral Taylor: I would like to contradict Admiral Sims and say that nothing was ever done in the Navy Department in that connection. The Navy Department never actually bombed any ships. What we did was to build caissons like the side of a battleship, and explode bombs to test them. We tested out the ships that we then had, and we concluded that we needed more protection. And I may say that the British had the same problem, and they solved it in a slightly different way, but we were clear in our tests. The Pennsylvania class was building then, and all of the details, so far as the three-year program was concerned, were put into those vessels, as gained from those experiments. Those experiments were confidential, and very few people were given the results. They had to be highly confidential.

The Chairman: How far could an airplane, the best airplane in existence, carry a 2,000-pound bomb and get back to its base?

Rear Admiral Taylor: The actual distance that an airplane could operate at is certainly less than half, and probably more than one-third of its maximum endurance. And the maximum endurance of any plane which I have seen referred to was the French plane which showed it is capable of carrying no weight at all, that is, no weight except fuel. I believe, myself, that the proper amount of endurance will seldom be exceeded by actually more than one-third. It may be you might get a half. Its total which it could accomplish in still air would be in the neighborhood of 1,800 miles, which would make its radius of action on the one-half basis 900 miles, and on the one-third basis, 600 miles.

The Chairman: Have we any planes that will go 600 miles with a 2,000-pound bomb?

Rear Admiral Taylor: My opinion, for what it is worth, is it would be impossible.

Senator Bingham: I would like to put in a statement by Brigadier General Ruggles.

ANTIAIRCRAFT DEFENSE

STATEMENT BY BRIG. GEN. C. L'H. RUGGLES, ORD. DEPT.

Introduction.—The most effective defense against enemy aircraft is of course the offensive action of our own aircraft. If our air force is inferior to that of the enemy, or becomes so at any time, the need for supplementing it by antiaircraft defenses is obvious.

The continued building up of antiaircraft defenses by all the combatants in the World War is the best testimony that antiaircraft defense is a valuable and necessary adjunct to the other combatant arms in time of war.

Functions.—It is believed that the principal functions of antiaircraft defense are as follows:

- (1) To provide immediate protection to important ground installations against bombing and attack planes.
- (2) To provide immediate protection for bodies of troops, including Artillery, against low flying aircraft.
- (3) To drive off or destroy enemy planes in the absence of friendly aircraft.
- (4) To break up enemy aircraft formations so as to allow defending planes to engage the disordered attack at an advantage.
- (5) To protect friendly aircraft when they are engaged at a disadvantage.
- (6) To indicate enemy aircraft to the defending aircraft.
- (7) To form the sole means of defense when the geographical position of vulnerable points precludes all possibility of adequate warning being given to defending aircraft in time for them to attain their fighting altitude.

Weapons.—In order to carry out the above functions, the following types of antiaircraft weapons are now believed to be necessary:

Cal. 30 machine guns on antiaircraft mounts; 37 m/m automatic guns on antiaircraft mounts; 3-inch antiaircraft guns on mobile carriages; 3-inch and 4-inch antiaircraft guns on fixed carriages; search lights and listening devices.

Effectiveness of Antiaircraft Defense as Indicated by World War Records.—The best measure of the effectiveness of antiaircraft artillery is undoubtedly found in the records of the World War period, since these records were obtained under actual combat conditions. Notwithstanding

the crude antiaircraft guns and instruments which were then available antiaircraft Artillery was found to be of great value.

The following table which is taken from official report is believed to be of interest. It gives a comparative statement of the number of airplanes brought down by antiaircraft guns on the same fronts:

Nation	Planes brought down by Aviation Service	Planes brought down by A.A. guns
Italy	540	129
Germany	6,554	1,520
France	2,000	500
	9,094	2,149

Thus the antiaircraft guns accounted for about one-fifth (1/5) of all the planes which were destroyed by the three countries mentioned. A further search of the War Department records indicates that the following expenditure of ammunition was made per plane destroyed:

Year	French Records	Rounds per plane brought down
1916		11,000
1918		7,500
	British Records	
1917		8,000
1918		4,550
Last part of 1918.		1,300

The American Service is officially credited with 58 enemy planes and an average of 605 shots required to bring down each plane.

The interesting point to be noted in the figures of ammunition expenditures in terms of planes brought down is the very rapid increase in the apparent effectiveness of fire notwithstanding the improvement in the speed and the ceiling of aircraft during that time.

I found during my recent trip abroad, during which I spent considerable time investigating the subject of antiaircraft defense, that the leading European countries are convinced of the necessity for antiaircraft defense, and that the belief is general that the efficiency of this defense will rapidly increase due to improvement in training methods and in materiel.

Defense of Paris.—The means of defense employed by the antiaircraft defenses of Paris in 1918 were of two kinds: first, passive means; and second, active means. Of the 483 planes employed by the enemy in attacks on Paris during 1918, only 37 succeeded in flying over Paris and 13 of these were brought down by the antiaircraft defenses.

Tests at Ft. Tilden, 1925.—The tests made indicate that on an average 4.6 percent rounds of 3-inch ammunition fired under similar conditions may be expected to burst within the prescribed limits. Towards the end of the season, that is, during the months of July and August, an average of 5.2 percent hits was being obtained. All these firings were conducted with the 3-inch antiaircraft gun, model of 1918, which was built during the war. The ammunition, fuses and fire-control instruments (except the height finders) used in these tests were also of war-time manufacture. The altitudes at which firings were held did not exceed 6,000 feet, as the small sleeve target could not be seen by the gunners beyond this altitude.

Similar records were obtained with caliber .30 and caliber .50 machine guns firing at low flying targets. They are also enclosed for reference. (Enclosure 4.) In the case of the machine guns only actual holes in the targets were recorded. These records show that the number of actual hits on the sleeve target was 2.47 per 1,000 rounds of caliber .30 and 1.16 hits per 1,000 rounds of caliber .50, at mean ranges of 3,052 feet for caliber .30 and 3,522 feet for caliber .50 guns.

Firings at Aberdeen Proving Ground.—In order to determine the pattern produced by the 3-inch antiaircraft high explosive shell, panel tests have been held recently at the Aberdeen Proving Ground. The experiments indicate that the shell fragments produced with the ordinary design of antiaircraft shell are not sufficiently uniform in size, some being too large, and a great many being too small. It is possible to regulate the size of these fragments by heat treatment of the shell and by the design of the shell, so as to make them much more nearly uniform. Experiments will be made to determine as nearly as possible the best size of fragment, taking into consideration its destructive effect on the plane and the fact that the larger the fragments, the greater the distance at which they will be destructive. It is possible, also, that better distribution of shell fragments can be obtained. At any rate, it may be confidently stated that the efficiency of high explosive shell fire against airplanes can be increased by better control of the fragmentation of the shell.

Discussion of Results Obtained at Ft. Tilden.—From tests made at the Aberdeen Proving Ground with the types of gun and ammunition used at Ft. Tilden, the probabilities of hitting the hypothetical target actually used at Ft. Tilden and the one later decided upon as a result of these tests are shown for various times of flight in the following table:

PROBABILITY OF HITTING PERCENT

Time of Flight, Seconds	Old Hypothetical Target	New Hypothetical Target
6	43	86
8	37	72
10	32	55
12	29	45
14	26	35
16	22	26
18	20	19
20	17	15

This table shows the probabilities of hitting the target on the assumption that the gun is correctly pointed, no errors having been made by the instruments or personnel in determining the future position of the target, or in laying the gun, so that the projectile would reach the future position of the target at the same time the target does.

It will be noted that the probabilities of hitting either target decrease quite rapidly as the time of flight increases. About one-half of this decrease in accuracy is due to the decrease in accuracy of the powder train fuse. There is every reason to hope that the new mechanical fuses which we have under development will materially improve the accuracy of antiaircraft shooting when the time of flight is greater than 12 seconds. This accuracy of gun and ammunition will also be improved by the adoption of

a non-hydroscopic powder which will not have its power varied irregularly by irregular absorption of moisture in storage and on the battlefields. Such powder is now under development. The new flashless powder, while not affecting the accuracy of fire when the new computing instrument referred to later is used, will aid the antiaircraft defense materially as the position of the guns will not be disclosed when firing at night. By careful selection of shell as to dimensions and weights and grouping them in lots so that the shells of each lot will vary as little in dimension and weight as possible, greater accuracy of gun and ammunition should be secured. A project to this end has now been inaugurated. Our new models of antiaircraft guns will have a muzzle velocity 400 feet per second greater than that of the guns used at Ft. Tilden, and our latest models of antiaircraft shell will by their stream-line form encounter much less air resistance than the shrapnel used at Ft. Tilden. Both of these factors will increase the accuracy of antiaircraft fire by decreasing the time of flight for a given range. It is fair to assume that the theoretical accuracy of gun and ammunition as shown in this table can be very materially increased.

The most illuminating conclusion that can be drawn from a consideration of the theoretical probabilities of hitting the airplane, on the assumption that the gun is correctly pointed, results from a comparison of these probabilities with the hits in the practice at Ft. Tilden. The average time of flight at Ft. Tilden was about 10 seconds and it appears that the number of hits on the hypothetical target actually used should have been, if the gun were correctly laid, 32 percent, or using the new hypothetical target determined at Aberdeen, this figure should have been 55 percent. Actually the percentage of hypothetical hits for the whole practice was about 4.6 percent. Here is a tremendous discrepancy between the percentage of hits actually obtained and the percentage that should have been obtained if the guns had been correctly pointed at all times; and it leaves a tremendous field for improvement in accuracy of antiaircraft fire, using the same guns and ammunition as were used at Ft. Tilden.

It is the function of the personnel and the fire control instruments which they use in antiaircraft practice to put the center of impact in the right place, and it is fair to assume that a large part of the correctable error may be charged to the fire control instruments used. How great this error is cannot now be stated, but the present instruments are being tested at the proving ground and their degree of accuracy when used against an actual airplane target will be obtained by means of the camera obscura installation.

A new and improved data computing instrument recently purchased abroad is designed along more scientific lines than the R. A. corrector.

This new instrument practically does away with all personal errors at the gun except those very slight errors which may occur in the comparatively simple act of matching pointers, and, moreover, the gun is continuously pointed according to the data determined and can be fired as soon and as often as it can be loaded. With this system, too, the computing instrument has only to predict the future position of the target over a time interval equal to the time of flight.

There is also under development a relatively simple and promising device that will do away with the necessity of manually elevating and traversing the gun and turning the fuse setter to match pointers.

We can then say we are on the eve of removing all the personal errors that occur at the gun and there remain only the personal errors of the men operating the computing instrument, the height-finder and the wind computer, as well as the errors, if any, inherent in the instruments.

Reference has been made particularly to the computing instrument recently purchased abroad, but there are a number of other promising instruments under development abroad and in this country. The instrument already purchased, however, has been completely developed, while the others have not.

The height finder is an instrument constructed on correct scientific principles.

The following table gives the probable errors of a skilled man, using height finders of varying lengths of base in determining varying altitudes at a horizontal range of 5,000 yards:

Altitude yards	Length of Base in Feet		
	9 feet	12 feet	18 feet
	Approximate error of reading in yards		
1,000	4.7	3.5	2.4
3,000	15.	13.	9.
5,000	34.	26.	17.

Finally, accuracy will of course improve with continued training of personnel; and it should be remembered that until the last two years, the antiaircraft artilleries will have no target to shoot at.

So far as day firing is concerned, therefore, there is every reason to expect a large increase in the accuracy of antiaircraft fire with the improvements in materiel contemplated and with continued training of personnel.

Night Firing.—The accuracy of the night firing at Ft. Tilden was on the whole greater than that of the day firing, and I think it can be stated that a plane illuminated at night by a searchlight is no more difficult to hit with antiaircraft guns than the same plane in daylight.

The development of listening and other devices for the purpose of locating airplanes when they can not be seen is still in its infancy but promising experimentation along these lines is being carried on in this country and abroad. A prominent European designer of antiaircraft fire control instruments told me this summer that he had great hopes of the development of such an improved listening device within a year.

Machine Gun Firing.—The results obtained with machine guns at Ft. Tilden this summer are far below what might be expected, if only the inherent accuracy of gun (not including the mount) and ammunition is considered. A long series of firings by the Ordnance Department with machine guns shows that with the regular infantry mount and with the guns clamped to prevent vibration, practically all projectiles should hit a vertical target 8 yards high by 6 yards wide at a range of 1,000 yards, and that about 25 percent of the projectiles should hit a vertical target one yard high by three-fourths of a yard wide at the same range.

It is quite possible mechanically to provide a machine gun battery pattern and when this is done with the improved mounts under consideration we may expect a decided improvement over the results obtained this summer at Ft. Tilden with machine guns. Improved facilities will include a telescopic sight of large field and low power, an improved range finder and an improved speed indicator. At very short ranges the gearing of these mounts may have to be released and the gun made free for

following the rapid movements of the plane by pointing with a shoulder rest. For use in certain positions where the terrain or other conditions make it desirable, simple tripod mounts should be provided. Extra guns for the tripod mounts will not be required as when they are used the guns may be transferred to them from the pedestal mounts.

37m/m Gun.—The 37 m/m antiaircraft gun is only now under development. The method of fire control with this gun will be similar to that used with antiaircraft cannon of larger calibers. As the projectile of this gun is fused to burst only on impact with the plane, it is not improbable that it will be found advisable to design a mount that will carry several guns and to arrange for a reasonable pattern at the target as proposed for machine guns.

Conclusion.—In conclusion, I am convinced that with provision for liberal training and for continued development of materiel along lines already well established, the effectiveness of antiaircraft fire will increase so that the combat between planes and guns on the ground will be no means be an unequal one. I believe that the losses of planes that may attempt during the day to bomb objectives protected by improved antiaircraft guns and machine guns, will be so great that the commander will hesitate to order such bombing unless the object to be obtained is so vital that he can afford to suffer a great loss of planes in the operation. Even at night the combat between planes and antiaircraft guns will not be an unequal one. To be sure the planes will probably attack singly and they will be in a measure protected by darkness, but this will also add to the difficulties of their mission, and they will always run great risk of being located by the improved listening devices and searchlights that undoubtedly will be developed for that purpose.

In stating my belief as to the efficacy, present and future, of antiaircraft guns, I do not want to give the impression that I do not appreciate the powerful offensive properties of the airplane. The airplane is a wonderful weapon for offense and for defense, particularly against attack from the sea. Its possibilities are enormous and we should aim to develop these possibilities to the fullest extent. We should have an air force at least equal to any that may be brought against us from overseas. But the very power of the airplane in offense emphasizes the need for an antiaircraft gun defense.

As an Ordnance Officer, I am impressed with the necessity of developing both services to the maximum extent permitted by appropriations, in accordance with the defense plans of the General Staff. Both services are new and of outstanding importance. In my opinion they present the most pressing technical problems which the War Department must solve at the present time.

STATEMENT OF REAR ADMIRAL DAVID W. TAYLOR—

Resumed

Rear Admiral Fletcher: You think that by well devised experiments we could determine more accurately than we know today what is the actual value to be attached to bombing?

Rear Admiral Taylor: I think so, Admiral. You can determine what I have characterized as the proving ground results, and from them you must infer in some manner what would actually happen in time of war.

The Chairman: Do you feel that bombing tests have heretofore been inconclusive?

Rear Admiral Taylor: Yes. The bombing tests have proved that under proving ground conditions you can sink a ship. I would not say they are of no value, but I think they are of comparatively little value, because the conditions under which the planes were operating were so different from the conditions under which you would operate in time of war.

STATEMENT OF REAR ADMIRAL CLAUDE C. BLOCH, U.S.N., CHIEF OF BUREAU OF ORDNANCE

Rear Admiral Bloch (after recital of the duties of his Bureau): The Bureau of Ordnance also designs offensive weapons, including bombs, bombsights, torpedoes for aircraft, and at the same time designs guns and apparatus for combating aircraft. We desire to supply the very best and the most efficient offensive material to aircraft in order that our aircraft may have the best that there is to be had and that they may be able to do more than the aircraft of any other nation.

At the same time we also design and procure weapons for our ships and stations for defense against aircraft. Similarly, we want this material to be the very best. All of this material is comparatively new. Many new developments are now in process and many in sight still to be made, even for aircraft defensive material and aircraft offensive material. I think that the surface is hardly scratched, although I do believe that more has been done relatively in connection with the material for aircraft than has been done in the defensive material.

The personnel for ordnance work in the Navy is drawn from the line of the Navy. There is no special corps, either afloat or ashore. Recently we have made a very strong effort to get flyers, qualified pilots, to take ordnance post graduate work. We have been successful and have three or four.

We supply for aircraft guns, ammunition, bombs, bomb sights, torpedoes, pyrotechnic and chemical material. All of that material is to be used by aircraft offensively. In all of this material I feel that we have made material progress. I feel that we have supplied or are on our way to supplying aircraft with the very best material that is in existence. Frequently we hear questions of why things have not been produced more quickly. The reason is that all of this design work, development work, is mechanical and engineering problems which take time. We have made material progress in bomb sights, as we have in other material, the exception being that some of the material is more easily developed than a bomb sight and has been finished first.

The Chairman: Do you interchange information in that respect with the Army?

Rear Admiral Bloch: To illustrate the very close liaison that exists between us and the Army I will say that we have weekly meetings with Army ordnance; we have the closest contact with the officers of that office, both collectively and individually, and we do nothing that they have done, we undertake nothing that we know that they have, and they act similarly towards us. In other words, all duplication is prevented.

The Chairman: We had some testimony from the Army aviators that they have in actual use a greatly improved bomb sight.

Rear Admiral Bloch: They have a sight to be finished, which is a great improvement; and so have we. I will state that I have succeeded in getting at least three firms of national reputation and resources, who have competent experimental staffs and engineer staffs, to undertake research work along these lines, and eventually the answer will be reached.

In 1920 we endeavored to take out the great sources of error from that sight and were successful in taking out the great sources of error. We retained a very eminent mechanical engineer in this country to assist us and we were successful, but unfortunately when the sight was sent to service, its intricacies were too great for the personnel to handle it, and the sight was never adopted for the entire service. Then our line of endeavor took a new angle, the idea being to make a very light sight, a very simple sight, which would correct the errors of the present standard sight. As a result of that work sights have been completed for about a year and are being tested under proving ground conditions in order to determine their errors and correct their defects. The great beauty of that sight is that it gives you the line of reference from which you measure the bombing angle. The bombing angle has to be measured from the true vertical. No matter how accurately the release angle is calculated, it will do no good unless you have the true vertical. Therefore the first thing you must obtain is that true vertical. There are certain other features about dropping the bomb that have to be solved, and it takes a long time to do it, particularly as we have made up our minds that we will solve this problem and get a sight weighing not more than 15 pounds. It is a very difficult problem, but I feel that we have solved it and will have the sight in service within a reasonably short time. Certainly within a year and a half.

Rear Admiral Bloch: The D-1 type General Patrick was kind enough to let us have. We sent them to our service with the idea of getting a comparison between that sight and our standard sight, which is known as Mark-3 sight. If their sight is better than our sight, and we have no better sight in view, we will accept their sight, the D-1. There is no question but what there has been tremendous progress in bomb sights, but our standard sights today, with certain improvements, is the same sight we had in 1918. We did not intend to spend large sums of money replacing those sights unless we got something that overcame what we considered to be the basic errors in bomb sights.

For ships we furnish a part of the catapult. Catapults are going to be put on all capital ships, and provisions are being made accordingly. Representative Vinson: It has been testified that they would not be put on the six old ships that are being reconditioned.

Rear Admiral Bloch: The Bureau of Aeronautics recommended that catapults be put on all capital ships and all cruisers. We concurred. The Chief of Operations concurred. The Joint Board recommended it to the Secretary of the Navy, who approved and directed that it be done. As a matter of fact, Congress has provided for three ships, three of the coal-burning ships that are now under modernization.

We also supply guns, antiaircraft guns for the ships as defensive weapons against aircraft. I consider that the guns that we have now on our ships are prewar weapons. We have a gun under construction which is far superior in every respect to those guns. It is a larger gun, a better gun, and in connection with those guns we have devised, for controlling the guns, aiming devices, which will remove as much of the personnel error of the gun pointer as is possible. It is reasonable to assume that the new guns will be at least four times as effective as the older guns which we now have on board. However, the guns which I call prewar weapons, and which are without any refined means of control, are by no means negligible. It is surprising the excellent results that are obtained with those guns, even without instruments of precision. For the first time last year appropriations were given us towards supplying the instruments of precision for these ships. I think there are only eight of our ships today that have any instruments on board to aid the gun in keeping on the target. Those instruments on the ships now, are, you might say, most elementary. We did not know in 1918 exactly what we did want in guns. Those we did have were good for 15 or 20 years, and it was futile to think of scrapping those guns that were capable of enduring a number of years, until we did know exactly what we did want and knew conclusively that what we did want was better than what we did have. Then we went to Congress and they gave us the money. Those guns are being prepared and we expect to have them on three of the ships in about 18 months. One ship will have the guns aboard in one month. There are certain parts of the battery, such as ammunition, control appliances, which will not be placed on the ship at the same time, but probably within six or seven months the installation on that ship will be completed. The other two ships will receive their guns and control appliances when they go to the Navy Yards, which is in regular routine, and in the course of 18 months they will also be furnished with guns. I think I am conservative in saying that those guns will be five times as good as the ones they have. Then if those guns do what we expect them to do we will ask for more money to put them on the other ships, but until we find out that they are better, and do what we expect them to do we do not expect to ask for more. There will be eight on each battleship and 12 on each airplane carrier. We have altogether 60 of those guns. That will not include the spare guns, allowing for casualties to the guns. 12 on each airplane carrier and eight on each of the three battleships. We have 48 guns and 12 spares.

From some statistical data that I have been able to obtain I find that Italy, during the World War brought down by flying machines 540 enemy flying machines; they brought down by antiaircraft artillery, 129 machines.

France during the same period brought down by aviation 2,000 planes, and by antiaircraft fire 500 planes; Germany during the same period brought down by aviation 6,554 planes, and by antiaircraft artillery 1,520 planes.

Throughout those figures you will find out what the ratio of aviation to antiaircraft is about four to one. In that connection you might say that these claims are not given in the statistics here as to whether they were bombers, fighters, pursuit planes or reconnaissance planes. The problems are very different.

We have statistics to show that in 1918 there were 483 German planes that endeavored to raid Paris. Only 37 of them penetrated the aircraft defenses of Paris, and of those 37, 13 were brought down by enemy aircraft artillery. The collective figures show that in 1916 it took 11,000 shots from artillery to bring each plane down. In 1917 that number was reduced to 7,500. In 1918 to 3,200. The British service shows for 1917 8,000 rounds per plane. In 1918, 4,550, and in the latter part 1918 we

have one figure showing 1,500 rounds per plane. That indicates the progressive improvement in antiaircraft artillery. At the end of the war there were no more planes to shoot at, and there was nothing to represent a plane with which practice could be had. Consequently the art did not advance until a target could be improvised at which a man could shoot. In our service we did not have a satisfactory target that could be used until about 1922. In 1920 and 1921 we used kites, toy rubber balloons filled with hydrogen, which was very unsatisfactory. In 1922 the tow sleeve was devised, which was about 10 feet long and about 4 feet in diameter, and that was used the first at that time. Since that time we have made considerable advancement in antiaircraft artillery, even in the absence of better material. Now we have better material or on the eve of having it, and I expect very material advancement in the next three or four years. As a matter of fact I believe that the surface has not been scratched in the development of antiaircraft defense.

Another indication of the effect of antiaircraft artillery is brought out by comparing certain statistical data which was collected by Colonel Ewell of the Army, who stated that between 1915 and 1919 the number of objectives hit by bombing was reduced by 150 percent. That was caused by the fact that in 1915, in the absence of any antiaircraft artillery bombers could fly low and they would have greater accuracy. In 1918, when the marksmanship of the artillery had improved they were driven higher and their accuracy was correspondingly reduced.

In 1922 when we had the first towed sleeve the sleeve was very small comparatively speaking, and very difficult to see. Consequently, we were not able to have our aircraft fire conducted at the altitude at which we would like to have had it, and every effort was made to develop a bigger and better target.

We have just recently succeeded in developing a target which is larger than the target we have had, and which can be flown at a high rate of speed, or at as high a rate of speed as the smaller target, and which will enable us to see the plane better and to have the practices higher.

We have never in the Navy used any hit for the purpose of scoring except an actual hit in the sleeve. One of our great difficulties in developing the accurate fire of artillery has been that we did not know what happened to the shell, that is where it burst, and we were unable to analyze our errors or to segregate and find out how they were caused, that is how many were caused by instrumental error, how many by munition error, and how many by personnel error and thus improve our marksmanship. We started to develop a method to determine exactly where high explosives or shrapnel bursts in the air with relation to targets. I believe the development will be successful. It is nearly completed, and we hope to test it out before Spring. If it is successful it will remove a great many of the controversial points, and it will also give rapid and logical developments to antiaircraft artillery and gunnery, because then we will have something which corresponds to the splash on the water which Admiral Sims spoke of this morning. During last year we had our first competitive year in antiaircraft gunnery, so for the first time we collected data of what was done.

There were 16 ships firing antiaircraft practices. They fired 36 antiaircraft practices and of the 36 antiaircraft practices sleeves were struck by 17 of them.

Two light cruisers were firing six antiaircraft practices. They struck three of them. The total was 18 ships firing 42 practices and it struck sleeves with 20 of them. In other words in 48 percent of the practices sleeves were struck. These figures only represent a beginning.

Senator Bingham: The point of your test would be that if an airplane was approaching a ship at the rate of speed with which the target was approaching, and at that altitude, you could expect that it would be hit 48 percent of the time?

Rear Admiral Bloch: Yes. If a single plane was approaching for bombing, 48 percent of the time it would be struck. That is correct. That is according to this one year's data. I would like to stress the point, that no one year's data can be taken as anything like conclusive.

Senator Bingham: Admiral Bloch, would it be fair to assume from that that one the data which you have, with a squadron of 18 bombing planes, approaching at an elevation of between 3,500 and 5,000 feet, at a slow rate of speed, a little more than half of them would reach their objective?

Rear Admiral Bloch: I do not know whether it would be fair to so assume or not, Senator Bingham. In the first place, these figures are based on a single plane, and a single sleeve, and a single ship firing. We have never been able to simulate a combined attack on a number of sleeves close enough together to represent a bombing attack in formation.

And right there: That is one of our problems, to devise a target which would represent a bombing formation. I do not know whether it is soluble or not, but that is one of the things we are trying to do.

Starting back as far as 1923 the Bureau of Ordnance, in conjunction with the Bureau of Construction and Repair, has been performing experiments with sections of battleships, representing some new construction, with a view to determining the destructive effect on under-water bottoms and on under-water structure at varying depths and with varying weights of explosives. We know from the Washington experiments that at least five charges did not sink that ship, which was of modern construction, and those charges were placed at certain definite depths, which may be difficult to obtain in actual practice, and at certain definite distances.

We also know the resisting power of steel armor, protective decking, and being familiar with the construction of the ship, the way the protective plate is put around the ship, and the vital parts of the ship, we are able to predict accurately the amount of damage that will be done by a bomb striking it at different places.

I feel that the modern ship is far more capable of resisting attack than even any of us have stated, although some of us have believed it.

In regard to the high speed target that Admiral Fletcher spoke of, we have endeavored to build two targets capable of being towed at a rate of 20 knots. Both of them would not stand up under the average smooth-water sea conditions; both failed. These targets were constructed under a patented design and we tried them, but we were never able to get results out of them what we expected to get; that average sea conditions, and high speed tension of the tow line, always introduced something that we were unable to overcome.

Representative Parker: The testimony before the Board is to the effect that during the war the highest bombing they did was two and a half to three miles; that they did not dare to come down lower than that; they were keeping up on account of antiaircraft gun fire on the one side and keeping up where the air was so rare that pursuit planes could not follow them.

Rear Admiral Bloch: That is substantiated in some of the testimony here I believe, it being stated 14,000 to 15,000 feet. The guns we have on our ships are capable of throwing projectiles 25,000 feet and our newer guns will throw them even higher than that.

Representative Vinson: Has your Ordnance Department ever considered the question of armor-piercing bombs?

Rear Admiral Bloch: We know their capabilities and their limitations, and tests have been made to determine these. But I do know this, if you have in your mind as to whether it is possible to perforate the protective deck plating and under magazines of a ship, I can assure you in the negative, that there is no possibility of piercing an armored ship in that way.

Mr. Coffin: There has been some testimony before us that the British are paying very little attention to bombing but giving their attention to torpedo-carrying planes. What is your own opinion as to that?

Rear Admiral Bloch: We have both in our Navy. We have torpedo-carrying planes and bombing planes. It is the same thing, but it will carry either a bomb or a torpedo. Our present view is that there will be opportunities to use torpedoes and that there will be opportunities to use bombs, both of which will have their special opportunities and their special advantages, and therefore it is necessary to carry both. I believe we have made considerable progress in the matter, and that we are probably as far advanced as any of them, if not even farther advanced in the art of launching torpedoes from planes.

STATEMENT OF CAPT. WILLIAM S. PYE, U.S.N., ASSISTANT DIRECTOR WAR PLANS DIVISION OFFICE OF NAVAL OPERATIONS

The Chairman: Will you tell the Board anything you think will assist it in the problem before it—you have heard much of the testimony that has been given?

Captain Pye: I intend, by my statement, to substantiate the following contentions:

(1) That the organization proposed by Colonel Mitchell is based on a theory of war which is unsound and foreign to the character of the American people.

(2) That the organization proposed by Major General Patrick is unsound in theory, and impractical of operation.

(3) That a Department of National Defense is unnecessary and unwise.

(4) That the existing organization of the National defense force is sound in theory, practicable of operation and requires only loyalty to one's own service and mutual confidence between the services, to be effective.

Discussion of Organization Proposed by Colonel Mitchell.—This proposed organization appears to be a hastily constructed compromise between the existing organization and the organization which Colonel Mitchell has previously advocated as indicated by the Surry Bill, H. R. 10147.

The proposed organization provides only for defense of sea areas and land areas. As the air force is incapable of carrying on offensive operations except against contiguous nations, the organization must be classed as purely defensive. This conclusion is strengthened by Colonel Mitchell's testimony in which, after describing his organization, he stated, "To sum up its influence, it would insure the defensive integrity of the United States as a self-contained unit." Is such a defensive organization a sound one?

A decision as to the organization of the national defense forces most effective for the prosecution of war, can be reached only after the following decisions have been made:

(a) The most advantageous form of national strategy.

(b) The major objectives of our national defense forces.

The aim of war is victory; not the mere warding off of defeat. History proves that victory in war requires to a greater or lesser degree—

(1) The defeat of the enemy armed forces.

(2) The conquest of enemy territory.

(3) The breaking of the enemy's "will to win."

Form of National Military Strategy.—The form of strategy employed in the prosecution of war in its initial stages may be offensive or defensive. Offensive strategy forces the fighting in the enemy's territory; defensive strategy awaits attack at home.

The Navy believes that the strategical offensive is the strongest form of warfare. Colonel Mitchell in many places advocates such strategy and in his testimony stated that the enemy should be attacked as far as possible from our own shores. Yet, with glaring inconsistency, he advocates the scrapping of the Navy, the only arm of the national defense which is capable of initiating an offensive overseas operation. Without a strong fleet neither the air forces nor armies can move across the seas. Without a fleet our world trade will soon become a sacrifice to the air fetish. Do the American people desire to adopt a national defense policy like that of China, and build up a wall of air defense along our shores outside of which the nations of the world can rob us of our commerce on which our national prosperity, even our national existence, depends?

I believe that you will agree that the first decision is this:

The form of national military strategy, most effective in war and most in keeping with the importance, power and character of the people of the United States is, the strategical offensive, and the organization, strength, and character of the national defense should be such as to insure its ability to take any offensive action required by this Government in any part of the world.

Why should the richest and potentially most powerful nation in the world be advised by Colonel Mitchell to accept a weak, strategically defensive policy? Only one answer is apparent to me. It is this: The acceptance of a strong, strategically offensive policy would logically place the major air forces under the Navy which alone has the power and mobility to initiate an offensive operation overseas. Hence, to give an excuse for advocating an independent air force, the country is advised to adopt a faulty, defensive strategy, contrary to the best military and naval practice and foreign to American character and traditions.

There is a possibility that Colonel Mitchell contemplates a time in the future when, in his opinion, offensive operations may be conducted by aircraft alone. Should our organization of the national defense forces be based on such an assumption? Before this is answered it is necessary to make our second decision—namely—what are to be the major objectives of our national defense forces?

The Major Objectives.—There are two schools of thought with regard

to the prosecution of war, and the decision as to the major objectives of our national defense forces is dependent upon which school is approved. One school believes in the application of military force in accordance with international law and treaties; the other believes in the application of military force against combatants and noncombatants alike, in the most ruthless manner possible.

When such force is applied in accordance with international law, the armed forces of the enemy constitute the major objectives; when this force is applied ruthlessly the major objectives most often are the enemy civil population and economic resources.

With the advent of aviation as an arm of the national defense force, with its ability under certain conditions to bomb and gas the civil population and to destroy economic resources, the school of ruthlessness has received many converts. Colonel Mitchell apparently belongs to this school.

Statements advocating the use of bombs and gas against the civil population and economic resources, are often read and tacitly approved by the unthinking, who do not realize that they strike at the heart of civilization. How many of these operations can be carried out without the violation of international law and our solemn treaties?

The laws of war on land prohibit the bombardment by any means whatever, of towns, villages, dwellings, or buildings which are not defended.

The Conference on the Limitation of Armament at Washington adopted a resolution for the appointment of a commission to consider and report any change in international law required to cover new methods of attack or defense resulting from the development of new agencies of warfare.

This commission, of which the Hon. John Bassett Moore was elected president, has made its report. Though not yet adopted, this report may be considered as an expression of policy of the leading civilized nations.

Article 22, Part II, Rules of Warfare, of this report, reads: "Aerial bombardment for the purpose of terrorizing the civilian population, of destroying or damaging private property not of military character, or of injuring noncombatants, is prohibited."

Article V of the Treaty between the United States, Great Britain, France, Italy, and Japan, relating to the use of noxious gases in warfare, states:

"The use in war of asphyxiating, poisonous or other gases, and all analogous liquids, materials, or devices, having been condemned by the civilized world and a prohibition of such use having been declared in treaties to which a majority of the civilized powers are parties—

"The signatory powers, to the end that this prohibition shall be universally accepted as a part of international law, binding alike on the conscience and practice of nations, declare their assent to such prohibition, agree to be bound thereby as between themselves and invite all other nations to adhere thereto."

Shall we build up our national defense on a theory of war condemned by all civilized nations? Is this nation which fought for the preservation of international law and the sacredness of treaties, to adopt this theory of ruthlessness in order to create an objective for an independent Air Force? Are we to become the "baby killers" and the "Boches" of the future? The civilized world would stand aghast at any such decision made by the United States of America!

The converts to the school of ruthlessness, however, are not confined to the United States. There are also many abroad who subscribe to the idea expressed in the following quotation from a paper by Mr. J. M. Spaight published in the British Year Book of International Law, 1925:

"It is only common sense to realize that modern war rests upon a foundation which is now, for the first time in history, open to attack before a nation's land and sea defenses have been broken down; that foundation being, first, a vast organization of munitionment; secondly, the continuance of the economic and industrial life of the nation; thirdly, the maintenance of the national morale."

"To imagine that because of any paper rule, this foundation will not be attacked is to dwell in a fool's paradise; and a fool's paradise does not cease to be such because its title deeds are to be found in an international convention. No restrictive covenant can avail to prevent that which is in the nature of things. To ask 'air power' to refrain from the 'direct action' of which it is capable is to demand of it a self denial to which there is no parallel in history. Every arm in turn has exploited its capacity to the fullest."

Gentlemen, if this quotation states a fact; if the governments of civilized nations contemplate, or are to tacitly consent, to the use of aircraft in the manner proposed by the apostles of ruthlessness, then, I say to you, international law and treaties are but manifestations of national hypocrisy; civilization is a failure, and Christianity a myth.

It was because of the belief that Germany had accepted the theory of ruthlessness that the world rose in arms against her. Have the people of this country forgotten our national feeling of wrath and indignation aroused by the tales of German "frightfulness"?

The Navy believes that this nation will be governed by International Law and treaties, and in its plans for war considers itself so bound. It does not subscribe to the theory of ruthlessness, and believes that any organization based on the prosecution of war according to such theory is unsound.

The Navy further believes that if the people of the United States will seriously consider this subject they will reject this theory of ruthlessness and with such rejection the principal excuse for an independent air service will disappear. In its legitimate sphere, aviation must be used against the enemy armed forces, and against private property only when such destruction has a reasonably close connection with the overcoming of the enemy armed forces. In such capacity aviation can be effectively employed only as integral parts of the Army and Navy. It is significant that no naval aviators and but very few army aviators have advocated before this Board, the formation of a separate air force.

Discussion of the Organization Proposed by Major General Patrick.—General Patrick's organization, and my further statements apply likewise to the organization advocated by Colonel Milling so far as I have been able to learn of his ideas, is open to the following criticism:

- (1) It is defensive in character. No idea of a strategical offensive is expressed.
- (2) It removes from the Army and Navy high commands air forces which are essential to the performance of their assigned tasks.
- (3) It provides for air force predominance in a sea area about 200 miles wide extending along our coast and around our outlying possessions,

which idea is unsound in theory; impracticable of operation; and would result in an ineffective exercise of command and in duplication of effort.

Neither the Army nor Navy admit that their requirements are met by the so-called air service. The Army organization provides for a General Headquarters Reserve for each Army which is, in effect, an air force, and as such may be used in accordance with the requirements of the Commander in the Field, for strategical reconnaissance, bombardment, or operations against the enemy aircraft. Tactically and strategically this air force may operate independently of the other arms of the service, or other major units of the command. Its objectives, however, must be determined by the Army high command if its operations, as required by International Law, are to be closely connected with the defeat of the enemy armed forces. Its bases must be guarded from land action by the other arms of the Army.

The Navy is the offensive branch of the national defense; it must meet the enemy fleet as far as possible from our shores, and defeat it or drive it into its harbors.

Modern fleets have strong air arms. Is our fleet to have merely a service of observation planes? If our fleet is to have a chance of victory, it requires not only air service, but air force of sufficient strength not only to prevent the effective use of air service by the enemy, but in addition to defeat the enemy air force, and to assist in the destruction of the enemy fleet by torpedo planes and bombers. An air force which is not part of the Navy, and trained in naval operations by the Navy, will be of little service in the naval battle. The Navy can not, therefore, subscribe to any proposal which would deprive it of an essential arm and considers General Patrick's idea of providing a detachment of the Air Force organized under the Secretary of War, to assist the Navy in its performance of its normal function, as unsound. In this connection I desire to invite the attention of this Board to the inaccuracy of Colonel Milling's diagram of air force organization in which the element, Navy air force, was omitted.

In General Patrick's organization he assigns to the Navy a "sea action theater" covering all the seas outside of a line 200 miles from the coast of the continental United States. In another place he mentions the outlying territories in connection with the "sea action phase" so it is assumed that he intends to provide "an air action" theater surrounding each of our possessions.

A glance through history will show that nearly all decisive fleet actions have been fought within less than 200 miles of the coast of the strategically defensive fleet. The same in all probability will be true of the future. Our fleet may be the superior offensive fleet or the inferior defensive fleet depending largely upon whether the people of this nation desire to adopt a strong naval policy or a naval policy of a second rate power.

According to General Patrick's organization the "air action area" extends 200 miles out to seaward and the "air force" should have the primary responsibility in this area.

What operations would be in progress—

- (1) Location and destruction of enemy submarines.
- (2) Location and destruction of enemy minelayers, or auxiliary cruisers, probably disguised as neutral merchant ships.
- (3) Protection of shipping by patrols, and the escort of convoys.
- (4) Mine sweeping.
- (5) Defense against enemy air raids approaching the coast from over the sea.

In all of these types of operations aircraft have a value, but primarily in the service of information. To be effective the pilots would require naval training, and seaplanes should be used. Most of the actual work connected with the tasks can be performed only by surface craft. In some cases submarines may assist. In such operations as these, however, the responsibility for the success or failure cannot be legitimately placed upon the Air Force. It is difficult to see how this responsibility can be divided between the Navy and an Air Force.

Defense Against Air Raids.—There has been much testimony given before this Board to the effect that an "air force" exercising control in an air action area 200 miles in width along our coast, can provide the necessary defense against air attack. I desire to invite your attention to the diagram I have prepared to show that such a contention is untenable.

The heavy line running parallel to the coast indicates the outer limit of the "air action area" as proposed by General Patrick.

The position "A" about 230 miles off the coast to the eastward of Cape Henlopen indicates a position which might be occupied by enemy aircraft tenders or carriers, from which aircraft attacks at daylight could be made with a required maximum flying distance of but 320 miles, against any or all of the following defended cities: Boston, Newport, New London, New York, Philadelphia, Baltimore, Washington, and Norfolk.

As all flying of these attacking forces would be during darkness, there would be little chance of their discovery until they were over the land. According to General Patrick's organization the "air action theater" has as its inner limit a line parallel to the coast and distant therefrom the range of artillery, so the enemy aircraft having reached the coast the "back" is passed to the Army, which, in the proposed organization, would have no air force.

Irrespective of whether the Army or Air Force would be responsible for the air defense of these cities, it is apparent that the enemy air force can attack any or all of them at dawn. The enemy may concentrate on any one. It is apparent that to be effective the air defense of each of these cities must be strong enough to repulse the entire enemy force. The ability of aircraft to concentrate rapidly to meet an attack is thus shown to be of little value when the enemy is allowed the initiative inherent in the offensive.

There may be some who will contend that an increase in the radius of action of airplanes will change the situation, but such is not the case. If aircraft carrying bombs operating from shore can reach an aircraft carrier, aircraft from the carrier can attack coastal cities. An air force is in itself impotent to defend the country from air raids.

This should indicate, gentlemen, the practical value of the initiative inherent in the strategical offensive and substantiate the Navy's contentions that the strategical offensive is the strongest form of warfare, and that the best way to defeat air operations is to destroy the enemy air bases whether they be fixed or mobile.

The Navy is now responsible by War and Navy Department orders, which have the effect of law, with the responsibility for "oversea scouting." It is the "eyes of the Army" so far as determining the approach of hostile forces over the sea. By those same instructions the Army aircraft are assigned the function of defense of all shore establishments against enemy aircraft.

Gentlemen, I ask you, what is to be gained by inserting between the

"sea action theater" and "land action theater" an "air action theater" which is purely fictitious and, as I have shown, of no real value even against air raids?

Before finishing this discussion of the situation existing when our fleet is operating on the strategic offensive, I desire to call attention to a false assumption often made by air force advocates to support their plea for the assignment of coast defense to an "air force." It is this. They contend that if the fleet is operating offensively the fleet will not be present on our coast to guard it against primary operations of the enemy.

It is a well-understood principle that offensive strategic operations of a primary nature can not be conducted overseas without a marked superiority of force. It is apparent, therefore, that our fleet could not be engaged in offensive strategic operations simultaneously with the conduct of such operations by the enemy, and, consequently, in the consideration of defense against primary operations our fleet must be considered an element of the defense.

It has been pointed out previously that a fleet on the strategic defensive may be forced back upon its home coast in order to receive the maximum support from shore based aviation. Strategic conditions might make such strategic retreat impossible or impracticable, but in an attack on the continental United States such as General Patrick has mentioned, such procedure appears probable.

If an "air action area" is established in which the air force command shall be responsible for the operations, it is apparent that when on the strategic defensive the fleet might come entirely under control of the air force. What an absurd situation!

The fleet will have its own air units and the Commander in Chief of the Fleet will be thoroughly competent to handle additional shore-based units. He will be on the spot. Why should the control of fleet operations pass to the Commander of the Air Force who will in all probability be at some base on shore?

Gentlemen, there is no such thing as an "air action theater"; there is a "sea action theater" but it extends to the coast; there is a "land action theater" which extends inland from coast to coast.

There might arise in the course of a campaign a situation in which the naval commander may definitely realize that the naval force available is of insufficient strength to prevent the enemy reaching our coast. As the Army by existing instructions is charged with the defense of the continental United States and the defense of shore establishments against enemy aircraft, the naval commander must under such conditions recognize the predominance of the Army plan and endeavor to operate the naval force to assist in its execution.

This situation does in effect permit the over-lapping of the land action area over the sea action area and is specifically covered in existing Departmental instructions.

This overlapping is based not on a theoretical line but on a definite situation. The Navy yields predominance in its "sea action theater" by the decision of the naval commander when he has become convinced that the naval force present is inadequate to the performance of its mission.

It would be more legitimate for the air force enthusiasts to claim "an air action theater" extending 200 miles inland than 200 miles at sea, for the objectives of air attack, except as relate to the naval battle, will be on shore. To make the inner limit of the proposed "air action theater" a line from five to ten miles off the coast, is just as ridiculous as making the outer limit cover an area in which the fleet may be forced to conduct its major operations.

The organizations proposed by General Patrick and Colonel Milling, are unsound in theory, and effective operation of the national defense forces under such an organization is impossible.

In closing I desire to present for your consideration a few conclusions which I believe can be substantiated by the testimony before this Board:

- (1) That the United States is safe from attack by aircraft unless such aircraft are brought to our coast by a foreign navy.
- (2) That the best defense against an air attack by aircraft which must be transported across the sea, is an efficient Navy.
- (3) That to make the Navy efficient for this purpose it must be equipped with air power which together with its gun and torpedo power will make it superior to any attacking force.
- (4) That the defense of the Philippines, Panama Canal, Alaska, and all of our outlying possessions is dependent upon a fleet capable of keeping open lines of communication by sea between them and the United States.
- (5) That no country ever won a war by a "Chinese Wall" method of sitting down at home and defending itself against attack.
- (6) That the safety and integrity of the United States and its possessions must rest always upon an efficient Navy and that Navy must be efficiently armed with aircraft; that this use of such aircraft is a purely naval function, and that to be efficient this aviation must be supplied, administered, maintained, and commanded by the Navy of which it is a part.

THURSDAY, OCTOBER 15, 1925

STATEMENT OF LT. CMDR. RICHARD E. BYRD, JR., BUREAU OF AERONAUTICS, NAVY DEPARTMENT, WASHINGTON, D. C.

The Chairman: Will you tell us something of your experiences in aviation in the Arctic on this recent trip that you have just returned from?

Lieutenant Commander Byrd: We flew over 6,000 miles up there, far enough for two planes to have gone twice to the pole and back, and we saw from the planes 30,000 square miles of Arctic regions. But the officers and men and planes are back safely. McMillan deserves most of the credit for that, and I am glad to give it to him.

The 30,000 square miles covered is due to the remarkable efficiency and astonishing spirit of the six aviation officers and men the Navy sent with me who had to do this under far the worst flying conditions ever encountered in the history of aviation. Aviation conditions up there were far worse than we had anticipated, both at our main base at Etah and out over the fjords and unknown areas.

After our present flight out of Ellsmere Land I got my men together and told them that I would never again order any of them to go out over that region, but they were always ready to go and were eager to volunteer.

The idea was not to make a sensational, spectacular dash, but to do some sane exploring and to advance gradually towards the objective, putting down bases as we went along. We avoided the dramatic to such an

extent that whenever possible we reported over the radio the beginning and results of flights at the same time.

We had a very difficult time on the way up, getting from Melville Bay, so when we got to Etah we had only 18 days to dismantle planes on the ship, set them up, test them, and do all our work of forming bases for the polar sea flight and the flight over the Greenland ice cap. Winter was chasing close on the heels of spring, and we had almost no summer. The Esquimaux said it was the worst year they had had for years. McMillan said that.

We erected the plane in three days, and that gave 15 flying days, and three and three-fourths days were good and two of the days were fair and one indifferent. So over half the time the weather was dangerous or very dangerous for flying.

We did not see a single land landing place in all the thousands of square miles we covered. As far as the water was concerned the ice began a mile north of Etah and filled the sea and all the bays and fjords. The summer ice cannot be landed on. It is very rough, and any plane that landed on it would be demolished. It shifts, however, with tides, and the winds, and there is a temporary landing place occasionally in the water, but they are as scarce as an oasis in a desert and a blame sight more welcome.

We found a great many uncharted snow covered mountains considerably higher than any shown on the charts, and 90 percent of the time they were covered with clouds.

One day we found a place in the water for landing and an opening in the great ice foot of Sawyer Fjord. We landed, put down a base of fuel and food and continued on to attempt to get over the great mountain ranges and locate another base in Cannon Fjord near the Polar Sea. We got beyond one range of mountains and fought hard to get beyond the second, but clouds that were too high to get over covered the tops completely. These mountains had never been explored. Cut jagged by ages of great glaciers, their ruggedness was magnificent and stupendous and their grandeur awful. The air there was the roughest we had ever experienced. I cannot tell you how small and insignificant the planes seemed in those mountains.

I cannot believe that this country is in the slightest danger of an invasion from the Arctic by aircraft. Incidentally I believe that some of the land we flew over cannot be traversed on foot. A foot traveler up there must follow the water routes, so I think we have something new to tell about the character of the land. Also, since dog sledges must be used in the spring when the snow is hard, I believe we have the first information the world has ever had about summer conditions.

One day we got beyond the mountains through a gap, had to go to the south to do that, off of our course. We flew over to Axel Heiberg Sound and Eureka Sound which lets into the Polar Sea. The conditions over there were no better. There was no proper landing place, so we had to return. In the meantime the clouds and the fog had closed in behind us. This is an excellent example of the great rapidity with which the weather up there changes. We came across that very frequently. We might have been in a very bad way had we not the sun compass with us, for the magnetic compass had an error of 160 degrees and was pointing nearly south instead of north. The force of the earth's magnetism is so small there that the electricity in the plane and the iron in the plane throws the compass off from 20 to 30, 40 and 60 degrees. In addition to that you have the variation, great variation of the compass over where we were at this time, 120 degrees, that is caused by the fact that you are flying between the North Pole and the Magnetic Pole.

The sun compass, the first of its kind in this country, was made for this expedition by Mr. Bjornsted of the National Geographic Society, and it enabled us to do what we thought might be impossible, to navigate between the North Pole and the North Magnetic Pole in an airplane.

On the return through a rift in the clouds we saw open water among the fjords. After loading up we flew over that fjord and put down a base of food and fuel and firearms. When we returned to this base to put down for supplies, we found the ice completely covered the water we had landed on in the short time we had been away, only a few hours.

It may interest you to know that we flew over the Greenland ice cap, an altitude of 11,000 feet, and found the ice cap as high as the plane. Over a mile of solid ice and getting thicker all the time, that is the great iceberg factory.

It may also be of interest to say that day after day we flew over the spot where 19 of General Greeley's men met their death from cold and hunger. It is easy for me to see where tragedy and failure have been the rule up there where it took Peary a lifetime to reach the pole. We found that Esquimaux clothes were much the best flying clothes. They are the warmest and the lightest. Esquimaux boots, polar bear pants and reindeer skin jackets is the ideal equipment. Peary said that was the warmest he had found, and in the experience I had I found that to be true.

Our planes were undoubtedly the best planes for this work. They are the best amphibians in the world, and up there both wheels and the boat is most desirable. The beaches are rocky and could not be approached without knocking a hole in the boat unless the wheels were put down. The planes had a very excellent performance. The material stood great hardships. The planes were built for the service. They had just been turned out, and we gave them a very excellent service trial up there under the worst possible conditions, and the planes stood up all right and they will be of great benefit to the service. They had a remarkable performance for an amphibian, because an amphibian has wheels in the boat, and naturally that extra weight there cuts down the performance.

With more time and a little better season the center of the unexplored region in the Polar Sea could be reached with an airplane. There is no part of the world that can not be conquered by aircraft.

Senator Bingham: Commander, you have not told us anything about the cat and dog fight that the distinguished army officer said occurred on the expedition.

Lieutenant Commander Byrd: There was none; no cat and dog fight. Commander McMillan and I understood each other perfectly and there was cooperation in every way between us.

The Chairman: The Board set today aside to hear from the industries because of the appreciation that after all the state of the industries, their capability of producing planes for the Government, is one of the most essential elements—in fact some feel the most essential element—in this phase of our national defense if a crisis should arise where a large number of planes were needed.

**STATEMENT OF LT. COL. W. E. GILLMORE, CHIEF OF SUPPLY
OF THE AIR SERVICE, UNITED STATES ARMY,
WASHINGTON, D. C.**

Mr. Chairman, of last year's contracts, first, of ten amphibians there are seven yet to be delivered. The planes that Commander Byrd took north were planes that were ready for delivery to the Army and turned over to the Navy for that expedition, so that that contract was held up in the Army delivery to that extent. There are 30 of the Boeing pursuit planes of the D-12 motor type still undelivered.

The next are the 30 PW-9s, or more commonly known as the Boeing pursuit, Seattle, Wash. There are 30 of those planes still to be delivered. There are 15 PW-8s, Curtiss pursuit planes, 11 to be delivered, and 75 Douglas planes, the O-2.

There are five Thomas Morse all-metal planes, contracted for last year, and none of those have been delivered. This is a duplicate in metal of the Douglas O-2, and was selected by the Chief of Air Service to get a real service test on all-metal ships of a ship that had excellent flying qualities. We have in the past experimented with metal ships, but usually with a new design, and on this contract last year we decided to take a ship that had excellent flying qualities and duplicate it in metal, all-metal, so we would know the flying qualities, and our test would be on the all-metal production.

There are 10 of the O-1s. That is the Curtiss observation, two-place ship, and is a new departure for the Air Service in that the entire fuselage is built of duralumin. It is our first experience in a service test with an all-duralumin fuselage. This ship has wonderful flying qualities, and in the competition for observation planes held a year ago it won second place. In all there are 138 planes to be delivered.

We have a contract signed for 25 Curtiss P-1s. This is developed from the P-8, and our pilots claim them to be the best ship that they have ever been in so far as the pursuit goes, the most maneuverable and the best handling ship that they have ever had their foot in. We have contracted for 50 of the primary training ships made by the Consolidated Aircraft Corporation of Buffalo, N. Y., and are today ready to sign a contract for an additional 50, making 100 of the P. T.-1s, primary training. We are ready to sign a contract for 10 of the new Huff-Daland bombers, as a result of an experimental order and development by the Huff-Daland Company of an excellent light bomber which has good flying characteristics, in fact it exceeded in almost all particulars what we had hoped for when it was laid down as a design. It has greater ceiling, greater speed, and carries a greater load. Our plan is to have two of these ships delivered in January of this year, give them the service test, and we hope to carry out the remainder of our bombing program for that development in the spring.

We are dealing with seven contractors: The Huff-Daland Company, of Bristol, Pa., the Curtiss Company of Garden City, Long Island, Consolidated Aircraft Company of Buffalo, N. Y., the Douglas Company of Santa Monica, Calif., the Boeing Aircraft Corporation, of Seattle, Wash., the Loening Aircraft Corporation of New York City, and the Thomas Morse Aircraft Corporation of Ithaca, N. Y.

We have contracts with the Curtiss Company, whose motor plant is at Buffalo, for 72 D-12 motors. With the Packard Motor Company at present for 18 of the Packard 2,500 800-horsepower motors. With the Allison Engineering Corporation for reconditioning our Liberty motors, and with the Wright Motor Company for reconditioning 150 Wright motors.

**STATEMENT OF CHARLES L. LAWRENCE, PRESIDENT, THE
WRIGHT AERONAUTICAL CORPORATION, PATERSON, N. J.,
ALSO PRESIDENT, THE AERONAUTICAL CHAMBER OF
COMMERCE**

I requested the privilege of reading this letter as the unanimous opinion of the aircraft industry as represented by the companies signing it:

Replying to your letter of September 28, signed by Dr. W. F. Durand, Secretary of the Board, we beg to say that representatives of the aircraft industry have agreed upon certain points which can be presented to your Board as coming from the industry, and as representing views of all of the members of the industry whose names are signed to this letter.

Replying specifically to some of the questions in your letter of September 28, we beg to answer as follows:

First—The present condition of the industry as to types of planes, number of planes, number and classes of men employed and suitability of men from other industries for this type of work was covered very completely and in great detail in a survey made by the Industrial War Plans Division of the United States Army, after a conference with the Navy, in the spring of 1925. The data for this survey was furnished by the individual companies and was compiled very carefully. We believe that it will answer fully your questions, and since it is not more than six months old, we do not believe that anything will be gained by our repeating this work in the short time available in which to do it.

Maj. J. A. Mars, of the Army Air Service, who carried out this survey and who displayed great skill in doing this work, has recently been transferred from the Industrial War Plans Division. We believe, however, that you will be able to obtain all the data necessary from that source.

Second—The question as to what would be necessary in order to convert the present industry from a peace time basis to a war basis, in the event of a national emergency was, we believe, covered by the Industrial War Plans Division in this same survey. In fact, the survey was made for the express purpose of furnishing a satisfactory answer to that question.

Third—In response to your request for suggestions of means to put the industry on an adequate peace time basis, so that it would be readily available for the Government's need in the event of a national emergency, the suggestions which the undersigned members of the industry unanimously desire to offer, are as follows:

(a) Secure continuity of production:

That a policy of procurement be adopted by all the departments of the United States Government who use aircraft, to the end that there may be a certain amount of continuity in the placing of orders for such materiel, with such plants and organizations as have maintained or created

good and adequate facilities for design and engineering development and the construction of types required.

This policy of continuity, if carefully worked out and constantly applied, would, we believe, go far toward correcting the conditions that have at times worked great hardships to most of the members of the industry and have limited the growth of the plants and the engineering facilities of the country.

(b) Stop Direct Competition of Government Owned Plants with the Industry:

Throughout the whole period since the war there have been many occasions when members of the industry have met sharp competition from plants owned and operated by the Army, the Navy and the Post Office. While recently there have been praiseworthy efforts on the part of the Government to reduce this competition, no definite assurance that this will be a permanent continuing future policy has been as yet afforded the industry.

(c) Eliminate Destructive Price Policy in Buying of Equipment:

Due, no doubt, in large part to the unwillingness of the contracting officers of the Government to expose themselves to recurrent unjust criticism and investigation and due in part also to the fact that the entire procurement business in aircraft has been carried on under inflexible rules and regulations of long standing, a great many of the orders placed with the industry during the period from July, 1919, to the present time, have been placed at prices which did not yield a fair profit commensurate with the risk and in many instances imposed heavy losses and, therefore, tended to destroy rather than to build up a strong, capable, well-equipped industry in the United States.

Several other important factors have contributed to this result. One has been competitive bidding. Another, as above indicated, has been the tendency, under the conditions which the contracting officers feel that they labor, to be over-exacting in negotiating contracts. Still another factor, as stated, has been the use of the Government-owned plants and facilities as a threat to drive down prices below a fair level.

(d) Recognize and Honor Proprietary Rights to Design as Tangible Property:

Throughout a large part of the period under review the contracting officers have frequently required the designer to sell the design rights of new equipment to the Government as part of the contract for building experimental models. The possession of these design rights, so acquired, became in many instances a commanding reason why production orders built from the design had to be thrown open to competitive bidding. This has hampered the Government in procurement of adequate equipment. It has also worked a hardship to the producers and has undoubtedly tended to restrict and to hamper the growth of the design departments in the industry and has thereby defeated one of the main purposes for which Congress has been urged to appropriate money for aviation, namely, the maintenance in this country of strong, vigorous engineering staffs within the industry.

We are pleased to reply to your further request for specific suggestions as follows:

1. Government Procurement.

Regarding Governmental procurement, we do not feel that we can properly make effective suggestions regarding methods of Government procurement excepting to point out, as has been done above, the reasons why, in our opinion, Government procurement to date has not resulted in establishing the industry on a healthy and well-equipped basis.

Any form or method of Government procurement that will accomplish the results above outlined will be acceptable to the industry.

2. Legislation.

We do not feel that the industry is justified in recommending specific legislation. If legislation should be necessary in order to accomplish the aims outlined in this letter, such legislation, no doubt, would follow the establishment of a suitable Governmental policy.

3. Recent Technical Developments.

On pages 197 to 254 of the Aircraft Year Book for 1925, a copy of which is filed herewith, your Board will find a survey of recent technical developments in the United States made by the Aeronautical Chamber of Commerce of America. This review, in the opinion of the undersigned, replies adequately to your request (3) for a sketch of the developments in this field, by the industry.

Conclusion.—On December 1, 1924, at a general meeting of the entire aeronautical industry, a resolution was adopted as follows:

"Whereas the President of the United States, in his message to the Congress transmitting the Budget, has said:

"'Aside from the important factor of training personnel, our National Defense is largely an industrial problem. Today the outstanding weakness in the industrial situation as it affects National Defense, is the inadequacy of the facilities to supply air service needs. The airplane industry in this country at the present time is dependent almost entirely upon Government business. To strengthen this industry is to strengthen our National Defense'; and

"Whereas the aircraft industry, sensing its duty in this regard, purposes fullest cooperation to that end. Now, therefore, be it

"RESOLVED, That we, the undersigned, representing the aircraft industry in the United States of America, proceed immediately to the consideration of what should be done to enable us to ascertain and develop a sounder policy within the aeronautical industry, so that closer cooperation between the Government and the industry may obtain through such relations of such character and on such a sound basis as will permit the safe and economical expansion of the industry and the development of military and commercial aeronautics, and thus provide the essential nuclei for production of Service types for the National Defense and emergencies."

This resolution was approved and formally signed by the following manufacturers:

This was on December 1, 1924, when we first got together.
Wright Aeronautical Corporation, Charles L. Lawrence, Vice-President.
Huff, Daland & Company, Thomas H. Huff, President.
Loening Aeronautical Engineering Corporation, A. F. Loening, Vice-President.

Johnson Airplane and Supply Company, J. M. Johnson.
The Glenn L. Martin Company, Glenn L. Martin, President.
Packard Motor Car Company, J. G. Vincent.
Chance Vought Corporation, Chance M. Vought, Assistant Treasurer.
Curtiss Aeroplane and Motor Co., Inc., F. H. Russell, Vice President.
Aircraft Development Corporation, C. B. Fritzsche, General Manager.
Aeromarine Plane and Motor Co., Inc., I. M. Upperco, President.
Stout Metal Airplane Company, Wm. B. Stout, General Manager.
G. Elias and Bro., Inc., A. J. Elias, President.
Atlantic Aircraft Corporation, Lorillard Spencer, President.
Consolidated Aircraft Corporation, R. H. Fleet, President.
Boeing Airplane Company, E. N. Gott, President.
Airships Incorporated, J. L. Callan, President.
The Douglas Company, Donald W. Douglas.
Goodyear-Zeppelin Corporation, Edw. G. Wilmer.
Cox-Klemin Aircraft Corporation, L. Charles Cox, President.
Remington-Burnelli Corporation, Vincent J. Burnelli.
Lawrence Sperry Aircraft Co., Inc., Robert Simon, Secretary.
Charles Ward Hall, Inc., Charles Ward Hall, President.

Pursuant to the above resolution, conferences were held between the representatives of the War and Navy Departments and the industry. Out of these conferences, an agreement was reached with the Army and Navy Air Services, which was finally approved and endorsed by the Acting Secretary of War, the Acting Secretary of the Navy, and the industry, as the accepted policy to control the Government and the industry, in the procurement of aeronautical equipment, as follows:

1. The Government shall encourage and promote the design and manufacture, by other than Government agencies, of aircraft, aircraft engines and equipment. The Government shall not engage in such work in competition with the aeronautical industry.
2. The Government shall recognize and sustain the principle of proprietary design rights applied to all aeronautical material.
3. The Government will not purchase or acquire the design rights for aircraft, aircraft engines or accessories when these are the products of established manufacturers.
4. The Government will not purchase aircraft, aircraft engines or accessories of new design until after the actual articles have been presented for test, nor until said articles have demonstrated their superiority over existing and accepted standard types, unless the design project is of such magnitude as to demand Government assistance in its development.
5. The Government shall avail itself as much as practicable of the facilities of the industry for all major overhauling and reconstruction.
6. The Government shall cooperate with the industry toward the continuance of successful operation of its units and wherever necessary recognize the principle of sub-contracting within the industry itself.
7. The Government will continue the policy of conferring from time to time with the accredited representatives of the industry in the consideration of their mutual problems.
8. The Government shall, as far as possible, standardize aeronautical accessories, materials and hardware, and otherwise assist in the procurement of non-standard materials and supplies.

The recommendations submitted by Mr. Lawrence were approved by the following manufacturers: Huff, Daland & Co., Inc., by Thomas H. Huff, President, Bristol, Pa.; Curtiss Aeroplane & Motor Co., Inc., C. M. Keys, President, Garden City, L. I.; Sikorsky Aero Engineering Corporation, P. Sikorsky, President, 250 West 57th St., New York City; Boeing Airplane Company, P. G. Johnson, Vice-President, Georgetown Station, Seattle, Wash.; Hamilton Aero Mfg. Co., Thomas F. Hamilton, President, Milwaukee, Wis.; Airships Incorporated, J. L. Callan, President, Hammondport, N. Y.; Packard Motor Car Co., G. H. Brodis, Eng. Exec., Detroit, Mich.; Consolidated Aircraft Corporation, R. H. Fleet, President, Buffalo, N. Y.; The Pratt & Whitney Aircraft Co., F. B. Rentschler, President, Hartford, Conn.; Thomas-Morse Aircraft Corporation, Raymond Ware, Secretary, Ithaca, N. Y.; Fokker Aircraft Corporation, A. H. S. Fokker, President, Kansas City, Mo.; Atlantic Aircraft Corporation, Halbert E. Payne, Vice-President, Hasbrouck Heights, N. J.; Wright Aeronautical Corporation, Charles L. Lawrence, President, Paterson, N. J.; Loening Aeronautical Engineering Corporation, Grover Loening, President, New York City; Chance Vought Corporation, Chance M. Vought, President, Long Island City; The Glenn L. Martin Co., Glenn L. Martin, President, Cleveland, Ohio; The Douglas Company, Donald Douglas, President, Santa Monica, Calif.; Cox-Klemin Aircraft Corporation, L. C. Cox, President, Baldwin, N. Y.; Buhl Verville Aircraft Corporation, N. C. McMath, Gen. Mgr., Detroit, Mich.; Remington Burnelli Aircraft Corporation, Vincent J. Burnelli, New York, N. Y.; Charles Ward Hall, Inc., Charles Ward Hall, President, New York, N. Y.; Goodyear-Zeppelin Corporation, P. W. Litchfield, Vice-President, Akron, Ohio; Fairchild Aviation Corporation, Sherman M. Fairchild, President, New York City; Aircraft Development Corporation, C. B. Fritzsche, Gen. Mgr., Detroit, Mich.

Manufacturers attending the hearing: P. G. Johnson, V. P. & Gen. Mgr., Boeing Airplane Co., Seattle; G. C. Loening, Pres., Loening Aero Eng. Co., New York City; Thos. H. Huff, Pres., Huff-Daland & Co., Inc., Bristol, Pa.; R. H. Fleet, Pres., Consolidated Aircraft Corp., Buffalo, N. Y.; C. B. Fritzsche, Gen. Mgr., Aircraft Development Corp., Detroit; Glenn L. Martin, Pres., Glenn L. Martin Co., Cleveland; C. W. Cuthell, Curtiss Aeroplane & Motor Co.; C. L. Lawrence, Pres., Wright Aeronautical Corp., Paterson, N. J.; C. M. Keyes, Pres., Curtiss Aeroplane & Motor Co., Inc.

The Chairman: We are advised by Mr. Lawrence that the representatives in the industry have agreed on 11 men to speak for them, each to speak 20 minutes. That will make it necessary, if we are to get through, to adhere right rigidly to the program or otherwise the men who come last will not be given a hearing. I therefore will have to request you to excuse any seeming discourtesy on the part of the board if, when the 20 minutes is up, I remind the person speaking to terminate his talk in order that the next man may be heard. We will now call Mr. Cuthell.

STATEMENT OF MR. CHESTER W. CUTHELL, GENERAL COUNSEL, CURTISS AIRPLANE AND MOTOR CO., AND CO-GENERAL COUNSEL OF THE NATIONAL AIR TRANSPORT COMPANY.

Mr. Cuthell: You have heard of the Aeronautical Chamber of Commerce's suggestion that the competitive bidding statute be amended. That does not mean that we want competitive bidding to be abolished at all.

As to standard aircraft and standard motors there should be competitive bidding; but it frequently happens, and it generally happens with new types, that there is an enormous amount of designing expense in the creation of a new airplane. In order that you may understand how those figures get so high, it has been our experience in the Curtiss Company that the expense of the development of a single design runs from \$100,000 to \$200,000. And it is even greater than that with motors.

There is no property right in the design of an airplane, because there is no statute that permits you to have a property right.

The War Department has tried to aid these designers, but they have been faced with one statute, that you must let the contract to the lowest responsible bidder. That is binding on the contracting officer, and on the Comptroller General of the United States, who is the ultimate authority on all financial matters. It does not matter what we may agree upon between the industry and the War Department, we never know when we are going to get paid until years after the plane has been completed, and the Comptroller General has passed the account.

I think that that statute ought to be given consideration by Congress at the earliest possible time. A great injustice has been done the inventors of this country under that.

Can you picture the War Department and the Navy Department paying \$1,000 royalty per plane per patent, when they have the right to use 200 cross-license patents, under the Manufacturers' Airship Association, for \$200 a plane, which is about 95 cents a patent, which covers the basic invention? There you have a situation that can only be dealt with by giving these who have the responsibility authority commensurate with that responsibility.

Now, men will not put money into any such business as this unless they know that their rights can be protected. That is another thing that ought to be changed. Of course, we are not advocating eliminating competitive bidding or the competitive bidding statute, but we think you should give the Secretary the right to use his discretion.

Now, gentlemen, if you want the industry to develop you have got to amend some of these laws that prevent them from going into it and taking money out of it.

There is still another point, and that is the general reluctance on the part of business men of the country to go into any business with the United States Government. That is particularly true of this business, because we have been more or less under attack all the time.

They say the Manufacturers' Aircraft Association is a trust. There is no such thing as a trust in the air.

With regard to lack of continuity of orders, that is a very serious thing to the industry. Why not give the Department the same right to contract for airplanes as is given them to contract for butter and cheese.

STATEMENT OF MR. C. M. KEYS, PRESIDENT, CURTISS AIRPLANE MOTOR COMPANY, GARDEN CITY, L. I.

Mr. Keys: The first cause of the destruction of the airplane industry as it existed in 1919 has undoubtedly been a lack of continuity of production and a lack of continuity of engineering.

Let me say that the Government has it in its power, all governments have it in their power, to control to a certain extent the allocation of business to an industry if that industry is considered essential, either to the national defense or to national economy.

In the particular case of the airplane industry the trouble in there lay definitely in the lack of any government policy with regard to aircraft at all.

The next cause which contributed to the results that accrued lies in competitive bidding.

The great bulk of the Government business, of the Army's business, during that period, meant a dead loss to the contractor in each case.

You absolutely stopped the evolution in each case, and you can not help but stop it.

Throughout this entire period we have met that hardship of Government competition.

We have met the competition of the Government, both Army and Navy and Post Office. It seems to me that in that competition with our own Government we have pretty thoroughly beaten the Government.

STATEMENT OF LIEUT. HAROLD R. HARRIS, OF THE ARMY AIR SERVICE, IN CHARGE OF CROP DUSTING FOR THE HUFF-DALAND AIRPLANE COMPANY, BRISTOL, PA.

Lieutenant Harris: For the last year and a half I have held more world's airplane records than any other man in the world.

As a result of the costly and lengthy experimental work carried on by the Huff-Daland engineers and the Department of Agriculture, it was finally determined that the application of dry poison dust by means of an airplane was both practical and economical. In consequence the Huff-Daland Dusters organization was formed to carry on in a commercial way the experimental work which had been previously conducted by the Huff-Daland Company in cooperation with the Department of Agriculture.

The Dusters organization used in this year's operations consisted of 20 airplanes and a staff of ten pilots, as well as the necessary supervisory personnel, entomologists, mechanics, and so forth.

One of the most important and valuable facts of this year's operations was the employment of these 10 pilots, all of whom are graduates of the Army Air Service Advanced Flying School. In other words, these 10 men represented the most of whom undoubtedly would have dropped out of aviation, and have been saved to the aviation work of this country by the commercial work which is now being carried on.

So far this year these men have flown a total of 900 hours, and have applied 375,000 pounds of poison dust on cotton, peaches, pecans and sugarcane, with most extraordinarily satisfactory results to the planters.

Commercial aviation is fundamentally sound and needs no direct subsidy if it truly fills an economic need, no matter what task it may be called upon to perform.

Senator Bingham: How much do the pilots average a year?

Lieutenant Harris: The new men are averaging \$2,400 a year. The older men up to \$250 a month.

Senator Bingham: From your point of view as a war pilot and a dust pilot do you consider this kind of training that your men get would be particularly useful in war time?

Lieutenant Harris: A man who would be a good dusting pilot would be the most remarkable man as an attack pilot that we could possibly find.

STATEMENT OF R. H. FLEET, PRESIDENT, CONSOLIDATED AIRCRAFT CORPORATION, BUFFALO, N. Y.

Mr. Fleet: I recommend:

1. Adoption and announcement of stable peace-time policy of aeronautical development and procurement for next decade by all Federal departments dealing with aircraft.
2. Legislation legalizing definite continuing appropriations for aeronautical projects which may require several successive years for development and for completion.
3. All Federal departments requiring aircraft should be directed to follow the practice of placing orders at such times and in such quantities that continuity of production is possible in factories the existence of which is jeopardized by each lapse in production.
4. Federal Government to share equally with cities and towns the cost of purchase, improvement and equipment of airports of military and/or civil value to the country—each such airport to be controlled and operated in peace times by municipality under uniform Federal regulations, with control under Federal Government, when necessary, in event of national emergency.
5. Legislation, if necessary, legalizing condemnation of property required by the Federal Government for airport or aircraft landing purposes.
6. Making and printing of aerial maps of entire country at Federal Government expense.
7. Creation by Federal Government of lighted, interstate airways with systematically developed, leased, emergency-landing fields—such airways to be selected with a view to their military and/or civil importance to the country.
8. Identification by Federal Government, as an aid to aerial navigation, of all cities, towns and villages by suitable signs visible from aircraft.
9. Each department of Federal Government dealing with aircraft to offer annual compensatory monetary prizes for development of aircraft of types of military and/or civil value to it.
10. Legislation to encourage aeronautical development throughout the country by authorizing copyright of aircraft designs, with Federal recognition of, and protection for, such designs as proprietary property.
11. As a protection to the public, direction to the Army and the Navy to grant certificates of airworthiness, upon application, when civil aircraft is determined worthy.
12. Legislation authorizing increase of National Advisory Committee for Aeronautics to include five representatives chosen from the aeronautical industry in this country, since this industry is vital to the country's defense.
13. Avoidance of Government interference, control or regulation of civil aeronautics, which might retard, discourage and stultify aeronautical development and operation in this country.

STATEMENT OF MR. GROVER LOENING, PRESIDENT OF THE LOENING AERONAUTICAL ENGINEERING CORPORATION

Mr. Loening: I think for an industry to come down to the Government to ask to be regulated is a most ridiculous performance. The fact is that the licensing of aviators, like the granting of permits to chauffeurs of motor cars, is something the companies can not handle, because they are not handling the characters of those men. But to regulate the building of the planes, and to have an inspection system such as is spoken of for commercial airplanes would absolutely ruin the business. We have some system of inspection, and I think it is perfectly possible, without a statute. I believe, of any kind for an order to be issued by the chief of the Air Service, on the advice of the Secretary of War, to McCook Field to obtain a fund out of the appropriations, specifically listed each year, or use other funds, to enable inspectors at McCook Field to inspect motors that are submitted to them for inspection. Therefore, it would be possible to handle this situation as the proposition now stands, without starting a department which would be a death blow to our little struggling industry.

It is obvious from reading the record that you have had presented a vast amount of opinions, visions of the future and predictions as to what will or will not occur—things such as General Mitchell's very vague charges which are as hard to pin down as a globule of mercury. Some may be well founded, but some are not, and without intention on the part of General Mitchell, they are exceedingly hurtful to the industry.

I want to particularly refer to the statement as to the absoluteness of the planes in our Air Service, in which the officers themselves take part—I do not know why; and also to General Mitchell's remarks about airplanes, which are frequently cut out of our newspapers by our foreign competitors in the industry and mailed to buyers in foreign markets, with a telling effect that we can not get over.

The fact is that on the French front today, the Russian front, the French are using, and have been, using largely the Breguet plane with the Renault motor. I would voice the opinion as an engineer that if they had really available machines of the more modern type, more easily maintained, I think they would use them. But the facts are they are not using them.

Now, the fact with reference to the British maneuvers recently held. In those maneuvers they had nine squadrons of airplanes. The Bristol fighter which they used was developed in 1916, and went into intensive service in 1917 as a small fighter and observation plane and is being used by them for their standard. The number of these they have is 142 fighters in service condition. And the Sopwith Snipe happens to have been built at the close of the war.

Now, in the pictures we have the motor is water-cooled, and not an air-cooled motor. So in the ships they had there is the maneuvers they had a type of water-cooled motor.

The statements that are made to you that the DH-4s are not up-to-date, and are obsolete may be desirable from the standpoint of a military man to achieve a progress of his own; it may mean something a little different than the public thinks when he says obsolete, but the public thinks he means obsolete, which means no good, and I must enter my engineering statement, which I can prove, that it is not true. These machines are not obsolete at all. They are not only useful, but would be the backbone of a war tomorrow if we had one, and those planes are the equal today, technically, of the Curtiss planes that are in use in the British and French armies which are no better off than we are by one bit.

In addition to that, we have got the records from the latest press reports of the three-seater naval competition held at St. Raphael by the French navy, and the winner of that competition—there were really two winners, the way it was arranged—was the Villiers twin-float seaplane, and the other was the Schreck flying seaplane. Both of those machines happen to be inferior in every single performance, in weight carried, in speed, in capacity of all kinds, ceiling and everything, so far as we can see, to the American planes flying years ago in the American Air Services. In other words, we could have sent over our Liberty plane of today and won that contest on performance.

We have developed the metal hull construction in this country to a high degree, as high as they have anywhere in the world. Not only that, we have introduced a new type of construction in this country which greatly improves it, and tends to make it more water-tight.

We have developed the metal propellers ahead of any other nation, the standard propeller, and the planes that flew in the Mitchell Field had the metal propeller on.

Not only that, but the British went so far as to buy the Reed propeller from this country.

The wing radiator originated in this country. Not only the wing radiator, but the tunnel radiator. The tunnel radiator was mounted on a machine in 1918, long before anybody else started to use it.

The divided axle landing gear is a development of this country. It is a device enabling you to get your axle out of the way for landing in rough country, where there are bushes and other things that might turn you over. This divided axle landing gear is a thing that is entirely new abroad. They are just beginning to put it on.

The British have a two-seater plane that has just recently been built that they call the Fairy Fox, which is very widely advertised. That machine, gentlemen, has the wings and body lines of the Curtiss racer. It has got the Curtiss motor. It is driven by the Reed duralumin propeller that has been used in this country for sometime.

The use of the inverted motor started in this country. It is absolutely new abroad.

And the air-cooled motor is a motor they have not even touched abroad. Our amphibian tractor plane is something they have not quite achieved abroad, and our performance beats anything they have got.

The non-stalling airplane is a thing that has been advertised very widely. The non-stalling airplane is a thing that we have had in this country for sometime. We have a training machine that absolutely will not stall.

So some of us get together and say, "Isn't that ridiculous? We have had these things years ago." But, gentlemen, we have not said so, and yet we have been advertised as engineers that know nothing, and that we have airplanes that are obsolete. It is not true. No matter what may be said by others for propaganda purposes, the facts are it is not so.

One of the greatest developments in this country is the catapult development in the Navy. That is something that the British and French know nothing about at all.

The parachute was originated in this country. I could go on down the list. It would take me hours to cover the ground. To condone a lie is wrong, and to say it is out-of-date is not supported by the facts which we have.

It certainly is exceedingly unwise for anybody doing business for the Government and with the Government to refer to statements that have been made by those familiar with Government business and the way it should be done, as Mr. Madden has. But Mr. Madden, nevertheless, made statements that should be reviewed in the light of figures. He spoke about the money that was spent by the Army and Navy in such a way that the public would conclude that those vast millions of dollars were wasted on a vast aeronautical industry that had not the brains to produce anything.

FRIDAY, OCTOBER 16, 1925

STATEMENT OF MAJ. GEN. ROBERT C. DAVIS, THE ADJUTANT GENERAL OF THE ARMY

Major General Davis: Under the provisions of the National Defense Act my office is charged with the operating functions of procurement, assignment, promotion, retirement and discharge of all officers and enlisted men of the Army under the approved policies of the General Staff.

The 1920 National Defense Act is the foundation of Army administration and organization. This law, the result of many years' experience, was enacted after most thorough consideration by Congress. Concerning personnel, its two most pertinent provisions were the establishment of a single promotion list and the creation of a new arms and branches.

The previous system of promotion was unsatisfactory. The single promotion list not only insures promotion based upon length of service but also insures the flexibility essential to meeting varying conditions by permitting details and transfers from one branch to another without in any way affecting the rank of officers.

The National Defense Act necessitated much rearrangement of officers by transfer between branches. For a new branch such as the Air Service, a proper quota of officers could be provided first, by details and transfers from other branches, and second, by new appointments. To some extent this was also true of greatly increased branches such as the Field Artillery. As new appointments were largely confined to lower grades, the only means of filling the higher grades was by transfer from other branches.

In 1920 there were appointed in the line of the Army from among emergency officers some 4,100 captains and lieutenants; 761 such appointments were made in the Air Service, giving that branch an excellent start in establishing its junior personnel. During the two years following the passage of the National Defense Act there were detailed or transferred to the Air Service from other branches 220 officers, 61 being in field grades giving that branch a portion of its required senior personnel. With the cooperation of the Air Service, appointments, details, and transfers, had brought about a healthy growth of this new branch in both senior and junior grades, with every prospect of attaining finally its prescribed personnel of 1,516 officers, if the procedure were continued.

The positions of officers on the single promotion list were the cause of some dissatisfaction in the Air Service and elsewhere. The chief of Air Service recommended that positions of his officers on the list be changed either to distribute them uniformly without regard to length of service or

to credit them with time spent in training prior to being commissioned. Other individuals or groups put forth claims based upon age and prior service of various kinds. These and all other representations made were considered in 1921 and 1922 by a board known as the "Shanks" board.

The Board recommends that the original promotion list should stand unchanged and submits its opinion that the maintenance of the single promotion list is highly important to the efficiency of the Army.

The Act of June 30, 1922, reduced the authorized commissioned strength of the whole Army and each branch thereof to 70 percent of the strength that had been authorized in 1920. This reduced the normal authorized commissioned strength of the Air Service from 1516 to 70 percent thereof, or 1,061. The Act, however, gave the President authority to increase or decrease this new strength by not over 30 percent provided the total for the whole Army was not increased. Hence any increase of the normal proportion for Air Service—1,061—required some decrease elsewhere in other branches.

The first problem confronting the War Department under the amended law was to fix the strength of various branches within the limits fixed by law. Desiring to continue building up the Air Service, the Department allotted it a strength of 1,247 officers or 186 more than its normal branch strength of 1,061. Furthermore, the War Department so divided the allotment of 1,247 as to provide a sufficient number of field officers not only for the organizational requirements but also for other duties outside the branch.

Not only did the Department allot a liberal strength to the Air Service, but it provided that so long as a shortage existed the minimum number of officers should be taken from the branch for other duties. The minimum was not placed so low as to preclude the detail of Air Service officers to the General Staff, to the service schools and to National Guard and reserve units. It did relieve the Air Service of furnishing its quota of officers for recruiting and similar duties, placing an increased burden on other branches of the Army in this respect.

The establishment of Air Service strength, as a whole and by grades, fixed a definite objective to be reached by continuing the prior satisfactory operations of detail, transfer, and appointment—details and transfers for the senior personnel and appointment for the junior personnel. The start toward this goal of 1,247 officers was made on January 1, 1923, with an actual strength distributed through the grades of 882 and a shortage of 365; the shortage in grades being 22 colonels, 45 lieutenant colonels, 90 majors, and 207 captains and lieutenants.

The progress made in filling in at the bottom by appointments has been satisfactory. It has been, in general, the practice of the War Department to distribute each group of new second lieutenants, from the Military Academy or elsewhere, to branches in proportion to their authorized strength. Under this procedure, the Air Service would receive about 14 percent of each group. However, with a view to overcoming its shortage, the War Department has given it from 15 percent to 21 percent of all the various groups appointed in the last three years. Clearly, all that is permissible under existing law governing Army appointments has been done and a continuation of current procedure will, within a reasonable time, build up the junior personnel to that now authorized by law.

In addition to filling at the bottom by appointments, the War Department faced the problem of filling in above the bottom, especially in the field officer grades. There were two ways of doing this: first, by the promotion of officers in the Air Service, which required new legislation departing radically from the National Defense Act, and, second, by the detail or transfer of officers from other branches, under provisions of the National Defense Act. It is upon the choice between these two methods that the present alleged dissatisfaction pertaining to Air Service personnel appears to hinge.

It will be recalled that in two years, 1920-1922, there had been 220 officers, 61, or about 28 percent of whom were in field grades, assigned or transferred to the Air Service from other branches. These officers, with the exception of four who were relieved, qualified as flyers either before or after assignment or transfer and had varying lengths of flying experience. They took their relative places in the Air Service according to length of commissioned service and without regard to length of flying experience. The assignment, detail, or transfer of senior officers such as General Patrick, General Fehet, Colonel Mitchell, Colonel Hall, and many other field officers, who took their places in the Air Service, based on the length of commissioned service, over officers with less commissioned service but with greater flying experience, has apparently been satisfactory to the Air Service. No suggestion has been made of a rearrangement of these officers according to their flying experience. Relative positions as fixed by length of service and general military experience appear to have been accepted as proper and normal and not objectionable. In view of previous success in the Air Service, and success along similar lines in the Field Artillery, further augmentation of the Air Service senior personnel by detail and transfer was contemplated.

A similar shortage of officers existed in the Field Artillery, which branch was greatly increased by the National Defense Act. Aided by the policy of the Chief of Field Artillery of approving details and transfers to his branch, during the period 1920-1922 there were transferred to the Field Artillery or detailed therein: 4 colonels, 11 lieutenant colonels, 17 majors, 58 captains, 84 lieutenants, a total of 174 officers.

Following the reduction of the Army in 1922, there was an acute shortage in field grades in the Field Artillery. The Chief of Field Artillery continued his liberal policy of approving transfers and welcoming transferred officers to his branch. Due to his policy and intensified efforts, there have been assigned to duty with or transferred to the Field Artillery since January 1, 1923, the following: 16 colonels, 14 lieutenant colonels, 10 majors, 39 captains, 62 lieutenants, a total of 141 officers. The result is that the branch now has a proper complement of officers in the various grades and will continue to have in future. The Field Artillery now has 40 colonels, compared to 41 authorized, 65 lieutenant colonels compared to 54 authorized, 216 majors compared to 212 authorized, and so on for the other grades.

The situation in the Field Artillery is cited because it appears to be exactly similar to that of the Air Service. For example: A radically different situation would exist in the Field Artillery today had this branch adhered to a theory that past technical qualifications were required for transfer thereto and separate branch promotion was the only feasible way of building up its personnel.

Returning now to the Air Service situation, we may well consider some of the facts accountable for its present shortage of 285 officers, most important of which is that of 22 colonels, 44 lieutenant colonels and 78 majors.

In January, 1923, the Chief of the Air Service adopted a policy of

disapproving the applications of officers for detail and transfer to the Air Service on account of their position on the promotion list. At the same time, he submitted recommendation for legislation to replace the provisions of the National Defense Act governing the appointment, promotion and retirement of Air Service officers. This proposed legislation contemplated that further building up of the Air Service by detail and transfer should cease, that a separate promotion list for the Air Service should be established, and that senior officers should be obtained only by the promotion of officers in the Air Service, all new material to come in at the bottom. Due to the fact that the Chief of Air Service objected to the detail of officers of his branch, who should they qualify in flying and be transferred, would be senior to some officers in the Air Service who had been flying for a longer period, difficulty was immediately experienced in filling the shortage in the Air Service.

This policy deters officers of suitable efficiency and experience from seeking transfer as they know that their applications will be disapproved by the Chief of Air Service. Due solely to this policy, the upbuilding of the senior personnel has been practically at a standstill for nearly three years.

There appears to be little equity in the stand taken by the Chief of Air Service, inasmuch as every officer now serving in the Air Service in the grades of general officer, colonel, lieutenant colonel and major was detailed or transferred from another branch of the Army. These officers have taken their relative places in the Air Service according to their length of service and their position on the promotion list and not according to their relative length of flying experience. There has been no indication of resentment, or loss of efficiency, due to this procedure; in fact the Chief of Air Service has recommended that there should be no rearrangement of them in accordance with length of flying experience.

The theory that transferred officers can not become efficient Air Service officers is dispelled by what has actually taken place. There appeared to be no compelling reason why the detail and transfer system of filling vacancies in the several senior grades in the Air Service, as provided in the National Defense Act, should be terminated for that branch only, and the gates forever closed and barred to other officers of experience, ability and high efficiency who are available to fill such vacancies and who in a reasonable time would become equally as valuable to the Air Service as those officers detailed and transferred in the past.

It is evident that if the present 22 vacancies in the grade of colonel, 44 in the grade of lieutenant colonel and 78 in the grade of major had been so filled, the field for selection would be much greater than with only three colonels and thirteen lieutenant colonels as at present.

Since January 1, 1923, there have been detailed or transferred to the Air Service no colonels, no lieutenant colonels and only one major. The point has now been reached where practically no applications are being received or are expected, unless the policy changes.

Since January 1, 1923, two majors of the Air Service have advanced to the grade of lieutenant colonel, 17 captains to the grade of major, and 18 first lieutenants to the grade of captain. It is, therefore, apparent that promotion unaided will not provide the necessary senior personnel for the Air Service for many years. Promotion must be accelerated in the branch or liberal details and subsequent transfers made. The attitude of the War Department has been that for the good of the Air Service and of the whole Army the latter method should be followed.

The Chief of the Air Service contends that the great need of the Air Service is a large number of young, active flyers, that flyers live twice as fast as other officers, and that the period of maximum flying efficiency is comparatively short. If these contentions are correct, the result will be that in a few years this service will have an increasing number of worn-out flyers who have passed the period of maximum flying efficiency but are still comparatively young. Possibly a few of them can be utilized in the Air Service in administrative, supply, and other non-flying capacities, but many of them will have no further usefulness in that branch. If the Air Service is set apart as a distinct and separate branch having its own promotion list, practically the only means of disposing of these officers will be to discharge them or place them on the retired list, which would be a costly and wasteful procedure. Another necessity for an outlet is occasioned by young officers from the U. S. Military Academy and elsewhere being assigned to the Air Service and while undergoing flying training being found temperamentally or otherwise unsuitable for flying. With the Air Service a separate and isolated branch discharge of these young officers and loss of their services will be necessary in lieu of their transfer to other branches as is now done.

In connection with an air personnel having 4,000 flyers, as proposed by General Patrick, it appears there may be possibilities of utilizing not only Reserve officers but also some enlisted men as flyers in the junior positions, and such possibilities have not been thoroughly tried out.

The Air Service has existed as a separate branch only five years. Its present officers, from the chief to well down the list, were obtained by detail or transfer. Some had prior experience as flyers and others had not. The supply of available and competent officers has not been exhausted and, therefore, there is no occasion to discontinue drawing on this available supply. Congress has provided the number of colonels, lieutenant colonels, etc., it deems necessary for the whole Army, including the Air Service. Until it is conclusively shown that this complement can not supply Air Service needs, as well as others, legislation to create additional field officers in the Air Service could not be conscientiously recommended.

Promotion is not a reward, but indication of command function.

A separate promotion list for the Air Service should be considered only as a last resort, when it can be clearly shown that the present single promotion system so long sought by the Army and Congress is inadequate.

To place the Air Service personnel on a separate promotion list or to make the Air Service a separate institution along the lines of the present Marine Corps would defeat the coordinate development of our means of defense by the desirable interrelation that was contemplated and provided for by the framers of our present national defense law.

The only apparent reason for rapid promotion in the Air Service is that it is to constitute a reward and compensation for flying. It is certainly not predicated upon organizational needs. This is more apparent when proposals for retirement are considered, as the latter will promptly deprive the Government of the services of the officers who have been so rapidly promoted.

Objectionable and unsound as these special retirements may be, something of the kind would be necessary to relieve the Air Service of its worn-out flyers unless the single promotion list be continued and, as now provided by law, there be freedom of transfer of officers to and from the Air Service, the temporary use of Reserve officers, and the use of enlisted men in the junior positions.

Viewed as a whole, the promotion and retirement system proposed may be summarized as contemplating for Air Service officers much more rapid promotion and a much earlier passing to the retired list than now obtains in our Service.

The factors so far touched upon have been largely exclusive of expense. The peace-time policy of economy followed by this Government and indorsed by the people is well understood. The War Department fully understands the part it must play and appreciates its responsibility to the taxpayers of the country. Clearly all plans and policies to provide personnel must be especially viewed from the economic standpoint, consideration being given to cost and value received.

Before any such extravagant personnel system is adopted all possible means of providing adequate and necessary Air Service personnel for both peace and war, without undue expense to the country, should be thoroughly investigated and tried out.

With regard to the immediate question, "What should now be done relative to the Air Service personnel?" two conditions present themselves, one of providing personnel for an Air Service of approximately the strength now authorized under the National Defense Act, and the other of providing personnel for an augmented Air Service such as contemplated by the Lassiter board.

It is believed the soundest procedure would be to adhere to our present National Defense Act and to increase the Air Service to its present authorized strength in senior grades by the detail and subsequent transfer of officers now available in other branches.

In the other branches vacancies have been filled and kept filled in this manner. The method has been tried and its success demonstrated. But this method is not now operating in the Air Service, due to the opposition of the Air Service itself.

The solution outlined will, it is believed, satisfactorily solve the immediate problem of building the Air Service personnel up to the present authorized strength. It will also be a sound step toward building up such greater personnel as may be later found necessary, as all action taken will have been fully in harmony with sound principles for future building.

In view of our fundamental policies of national defense, of the excellent flying material available in this country in the Army and elsewhere, and of the necessity for economy in providing our national defense, it is believed that both immediate and future building should adhere closely to our present national defense law, being based upon the following principles:

First. The permanent officer component of the Air Service personnel should be kept at a minimum.

Second. The permanent officer component should be augmented as far as practicable by a less expensive flying personnel of Reserve officers, flying cadets, and enlisted men.

Third. The officers of the Air Service should be continued on the present promotion list and a close relationship between them and other officers maintained.

Fourth. There should be a flow of officers into the Air Service from other branches and from the Air Service back to such branches.

Fifth. While on a flying status all Air Service personnel, permanent or temporary, should receive increased pay or its equivalent in insurance as a compensation for the hazards of flying.

Sixth. As at present, only flying officers competent to command should command flying units or be in charge of flying activities.

Seventh. The permanent personnel should be sufficient to provide eligibles for selection to general officers of the line for detail to the General Staff, to the General Service Schools, and to all other places in the Military Establishment where the policies, plans and doctrines for the development of our combined means of national defense are formulated and considered.

It is firmly believed that building along these lines would be just to both the Government and individuals and would in the end give this nation a maximum of national defense and an air force personnel second to none.

STATEMENT OF BRIG. GEN. FOX CONNER, ASSISTANT CHIEF OF STAFF, G-4 (SUPPLY)

General Conner pointed out that financial problems form the principal difficulty in providing adequate Air Service. He then explained the budget system of the War Department and showed how the sum total of the primary War Department estimates was fixed by the Director of the Budget.

General Conner next analyzed figures for appropriations for the fiscal year 1926, as follows:

Military items, budget.....	\$259,685,274
Military appropriation	262,500,050
Deduct direct expenses of civilian components.....	41,882,777
(These are the appropriations made directly for the pay and other primary expenses of the National Guard, Organized Reserves, Reserve Officers' Training Corps, and Citizens' Military Training Camps.)	
Left for Regular Army.....	220,617,273
Fixed expenses	195,838,871
(These include the pay, transportation, subsistence, clothing, and general housekeeping expenses of the Regular Army of the United States. These expenses can not be reduced except by a reduction of personnel. Naturally they are as much for the benefit of the Air Service as for any other branch of the Army.)	
Other appropriations available.....	24,778,402
(These are the appropriations in which the nature of the items estimated is at the discretion of the Secretary of War.)	

Of this amount of \$24,778,402, which is the only sum over whose allocation the War Department General Staff has any real influence, \$14,700,000 was appropriated directly for the Air Service. In addition \$737,000 appropriated for the Ordnance Department was expended on materiel for the Air Service.

In the 1926 estimate the War Department neglected and curtailed many necessary things in order to put every possible dollar into the primary estimates for the Air Service. In addition the War Department, out of its total supplementary estimate of \$27,382,944, urged \$8,000,000 for aviation. The whole of this \$8,000,000 was not allowed, but there was granted a contract authorization of \$2,150,000 over and above the appropriation of \$14,700,000.

General Patrick has predicted that on July 1, 1926, we will have 1,256 planes. In order to do this \$6,550,000 must be spent on new planes during the fiscal year 1926. In order to have 1,258 planes (practically the same number) of July 1, 1927, he will need a grand total of \$9,700,000 during

the fiscal year 1927. As a matter of fact, the War Department in the 1927 estimates included \$9,900,000 for purchase of any payment of past debts on planes. Of this sum \$2,150,000 is needed to make up contract authorizations during the current fiscal year. From this it can be seen that merely to stay where we are we will need \$1,200,000 more in 1927 than we had this year; and owing to the final scrapping in 1927 of the D. H. 4's built during the war we will probably need still more in 1928. "This money can not be found without increasing the total expenditure, or reducing other arms."

General Conner then pointed out that the housing difficulties of the Army, which are recognized as critical by every well-informed person, demand more money—as much for the use of the Air Service as for any other arm; and he also indicated the critical state of our ammunition reserve. In Air Service bombs alone our shortage, below estimated war requirements, before quantity production can be started, is over \$12,000,000. Such items, which affect everyone in the Army, must be looked out for somehow. General Conner then discussed the money needed to finance, from a material standpoint alone, the Air Service program (1,927 planes). This would cost for direct and indirect costs more than \$60,000,000 a year.

In discussing the cost of the Lassiter board report, General Conner said: "The next financial question is the cost of the Lassiter board program of 4,000 officers, 2,500 flying cadets, 25,000 men, 2,500 planes, and certain lighter-than-air equipment. Upon even a casual examination it is apparent that the one difficulty in putting into execution the provisions of the Lassiter board is that of finance."

In the report of the Lassiter board no attempt was made to estimate other than direct Air Service costs. In a later revision such effort was made. However, there were certain errors in this later revision. My division of the General Staff has attempted to make a somewhat detailed estimate of the costs of putting into effect the provisions of this project during a period of 10 years. The results show an average money requirement of \$90,298,784.50 a year during a 10-year period. This must be regarded as a minimum rather than as a maximum. For example, full account is not taken of the effect of depletion of surplus stocks on the Army as a whole. This depletion is most serious and for the whole Army at its present strength will probably require increasing appropriations amounting to about \$11,000,000 in the first year and about \$31,000,000 in the tenth year. Nor does this estimate we have made provide for building up and maintaining the war reserve of ammunition without which the Air Service, as well as all other branches, is helpless during the first several months of a war. Other causes for increases will undoubtedly be found.

Moreover, the estimate we have made does not attempt to include the Air Service proportion of general overhead, retired pay, aviation in the National Guard, or short active duty and inactive duty in the Organized Reserves; the two latter alone will increase our estimates by an average of about \$3,821,000 a year. In connection with pay it may be noted that in the tenth year the pay of the Air Service personnel on active duty in the Regular Army would amount to \$34,596,265; or very considerably more than one-fourth the total amount appropriated for pay for the whole Army in 1926. It may also be noted that \$90,000,000 is considerably more than one-third the whole amount appropriated for the Regular Army and all overhead in 1926. It is well known that the Air Service is a most expensive arm. Some measure of this may be obtained by dividing \$90,000,000 by the number of tactical planes (1,843) carried by the Lassiter board. The result shows an annual cost in time of peace of about \$49,000 for each tactical plane.

The truth is simple: In view of its other vital needs and the economy policy of the Government the War Department has as yet been in no position to submit estimates for carrying into effect any part of the Lassiter board program. So long as the ammunition reserve is disappearing, all money demands increasing due to exhaustion of stocks, animals retained in service beyond their useful life, and 40,000 officers and men are living in war-time shacks, the War Department would, in my opinion, be quite unjustified in urging the Lassiter board program to the exclusion of all else.

"I wish to emphasize the fact that the problem of financing the Air Service is not the only problem which confronts the War Department. Housing, ammunition, and exhaustion of war stocks have been mentioned. In addition the War Department has programs for strengthening our defenses, both in the air and on shore, in Oahu and Panama; a program for a slight increase in the Regular Army other than air; the National Guard program; the Organized Reserve, Reserve Officers' Training Corps, and the Citizens' Military Training Camps programs; and others as well. Altogether the War Department has 13 separate programs, some of which have received approval and some of which have not. Taken separately, each may make out a case of vital importance. But each would cost additional large sums of money, and if all were put into effect the cost of the Army would reach more than \$400,000,000 in a single year. This is a staggering total when compared with present appropriations. Under the present policy of paying off the national debt and reducing taxation no such sum is available. In the meantime it is the business of the War Department to utilize such sums as are available to the best possible advantage in preparing a balanced force, in personnel and material, for the national defense. In executing this duty the War Department is favoring aviation to the fullest possible extent."

General Conner concluded by pointing out the difficulties which must be overcome by any power which desires to make a serious aerial attack on the American continent. In this connection he said: "I should like also to comment very briefly on the supply difficulties involved in bringing a large force of airplanes to the North American continent and in putting these planes into an effective attack upon our cities or industrial regions. The present limitations on the tonnage of carriers makes it necessary that any large force, say 1,200 planes, be brought by transport and that they be set up after arrival. Aircraft and Air Service supplies are among the most bulky of all cargoes. A bombing plane requires more than 160 ship-tons of space, and a pursuit plane over 21. It is estimated that about 50 ships of the type of our transport St. Mihiel (deadweight tonnage 6,970) would be required for 31 bombing squadrons with 403 bombing planes and 32 pursuit squadrons with 800 pursuit planes. These 50 ships do not provide, however, for bringing any service squadrons or bombs, both of which are manifestly essential. Outside of United States ports there is no port in North America that can berth 50 St. Mihiels simultaneously. Cargo ships require some time to unload. The best average A. E. F. performance was about 10 days. A large number of planes can not be set up on a dock; they must be moved to a suitable installation, and this transportation consumes time. If suitable installations for setting up a large number of planes are not in existence, and they are not, they must be created; and that again takes time."